



# LONG TERM PRESERVATION OF EARTH OBSERVATION SPACE DATA

## EUROPEAN EARTH OBSERVATION SPACE DATA SET

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# 1. INTRODUCTION

## 1.1 Background

The need for accessing historical Earth Observation (EO) data series strongly increased in the last ten years, mainly for long term science and environmental monitoring applications. This trend is likely to increase even more in the future in particular for the growing interest on global change monitoring which is driving users to request time-series of data spanning 20 years and more, and due also to the need to support the United Nations Framework Convention on Climate Change (UNFCCC). Content of EO data archives is extending from a few years to decades and therefore their value as a scientific time-series is continuously increasing. Hence there is a strong need to preserve the EO space data without time constraints and to keep them accessible and exploitable. The preservation of EO space data can be also Future as a responsibility of the Space Agencies or data owners as they constitute a humankind asset.

The large amount of new Earth Observation missions upcoming in the next years will moreover lead to a major increase of EO space data volumes. This fact, together with the increased demands from the user community, marks a challenge for Earth Observation satellite operators, Space Agencies and EO space data providers regarding coherent data preservation and optimum availability and accessibility of the different data products.

Traditionally in Europe (including Canada), there has been poor cooperation in this field with no common approach for long term preservation and access to EO space data even if cooperation and sharing are key aspects to be pursued for the benefit of the user community. A cooperative and harmonized collective approach on Long Term Data Preservation (LTDP) in Europe (i.e. a European EO LTDP Framework) is needed to coordinate and optimize European efforts in the LTDP field and to ultimately result in the preservation of the Completed European EO space data set for the benefit of all European countries and users and with a reduction of overall costs.

In 2006, the European Space Agency (ESA) initiated a coordination action to share among all the European (and Canadian) stakeholders a common approach to the long term preservation of Earth Observation space data. During 2007, the Agency started consultations with its Member States presenting an EO Long Term Data Preservation strategy [R. 1] targeting the preservation of all European (including Canada) EO space data for an unlimited time-span ensuring and facilitating their accessibility and usability through the implementation of a cooperative and harmonized collective approach among the EO space data owners.

The Long Term Data Preservation Working Group with representatives from ASI, CNES, CSA, DLR and ESA was formed at the end of 2007 within the Ground Segment Coordination Body (GSCB,R. 2) with the goal to define and promote, with the involvement of all the European EO space data and archive owners, the LTDP Common Guidelines and also to increase awareness on LTDP. The LTDP guidelines were published at the end of 2009 [R. 3] and constitute a basic reference for the long term preservation of EO space data. Their application by European EO space data owners and archive holders is fundamental in order to preserve the European EO space data set and to create an European LTDP Framework. The application of the identified guidelines is not a requirement or a must for European EO space data owners and archive holders but is strongly recommended also following a step-wise approach starting with a partial adherence.

## 1.2 Document Scope and Purpose

Main goal of the European EO Long Term Data Preservation Framework is to preserve the European, and Canadian, EO space data set for an unlimited time-span ensuring and facilitating the accessibility and usability of the preserved data sets respecting the individual entities applicable data policies.

The European EO Space Data Set consists of:

1. All EO space data from missions or instruments owned by European Member States (public or private organizations) including Canada.

2. All EO space data over Europe from non-European Member States missions or instruments available through agreements with European entities (e.g. Third Party Missions managed by the European Space Agency).

The space missions/sensors whose data constitutes the European EO Space Data Set have been subdivided in the following six main categories:

- ✓ C1: High and Very High resolution SAR imaging missions/sensors (different Radar bands).
- ✓ C2: High and Very high resolution multi-spectral imaging missions/sensors.
- ✓ C3: Medium resolution Land and Ocean monitoring missions/sensors (e.g. wide swath ocean colour and surface temperature sensors, altimeter, etc).
- ✓ C4: Atmospheric missions/sensors.
- ✓ C5: Other Scientific missions/sensors.
- ✓ C6: Space related data (e.g. campaigns, etc..).

The scope of this document is to list all the past, current and future missions or instruments whose data are composing the European EO Space Data Set providing in addition some information related to mission owners, instrument characteristics and information related to LTDP. This document is reviewed and updated once per year.

The document is composed of two different kinds of tables both associated to each one of the categories identified above. The first table contains seven columns with the following generic information on the mission and instrument:

1. Name of the Mission and Instrument
2. Mission owners and partners (i.e. Distributors of European data with mission data archive)
  - a. Owner:
  - b. Partner/Distributor:
3. Orbit details and URL to official web site
4. Mission timeframe and Instrument status
  - a. Mission: Completed, On-going, Future
  - b. Timeframe: "Launch Date" and "EOL Date" if Completed, "Launch Date" and "Planned EOL Date" if on-going, "Planned Launch Date" and "Planned EOL Date" if Future.
  - c. Instrument: Operational, Not Operational
5. Instrument Type
6. Instrument Technical characteristics

Wavelength definitions used are as follows:

VIS (~0.40  $\mu\text{m}$  - ~0.75  $\mu\text{m}$ )

NIR (~0.75  $\mu\text{m}$  - ~1.3  $\mu\text{m}$ )

SWIR (~1.3  $\mu\text{m}$  - ~3.0  $\mu\text{m}$ )

TIR (~6.0  $\mu\text{m}$  - ~15.0  $\mu\text{m}$ )

MW (~1.0 cm - ~100 cm)

MWIR (~3.0  $\mu\text{m}$  - ~6.0  $\mu\text{m}$ )

FIR (~15.0  $\mu\text{m}$  - ~0.1 cm)

## 7. Instrument measurements and applications

The second table contains seven columns with the following LTDP specific information on the mission and instrument:

1. Name of the Mission and Instrument
2. Coverage of available data (i.e. archived or future)
  - a. Archived: Global, European or Other
  - b. Future: N.A. or planned
3. Timeframe of available data (i.e. archived or future)
  - a. Archived: Start date (Month and Year) and End date if available (Month and Year)
  - b. Future: N.A.
4. Archived data (AIPs) levels and format (according to the following example):
  - a. Level 0: SAFE format
  - b. Level 1: XXX format
  - c. Level 2: GEOTiff format
5. Archive location and current volume (at TB level) of archived data (according to the following example):
  - a. Toulouse c/o CNES: 1PB
  - b. Matera c/o ASI: 250 TB
  - c. Etc..
6. Data Access Approach and Links (e.g. data access web site, catalogue web-site)
7. LTDP Contact point: name and email of contact point for LTDP communications and activities

### ***1.3 References***

- R. 1 European Strategy for Long term EO data preservation and access, ESA/PB-EO/DOSTAG(2007)2, 8 October 2007.
- R. 2 GSCB web site, <http://earth.esa.int/gscb>
- R. 3 “European LTDP Common Guidelines”, GSCB-LTDP-EOPG-GD-09-0002, Long Term Data Preservation Working Group.

## 2. C1: HIGH AND VERY HIGH RESOLUTION SAR

### 2.1 High and Very High resolution SAR Table 1

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
S1	ERS-1 SAR Active Microwave Instrumentation. Image Mode	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/GGGWBR8RVDC_index_0.html">http://www.esa.int/esaEO/GGGWBR8RVDC_index_0.html</a>	Mission: Completed Timeframe: Launch Date: 17 Jul 1991 EOL Date: 07 Mar 2000 Instrument: Not Operational	Imaging microwave radars	<b>Resolution Summary</b> 30 m [Best Resolution: 30m] <b>Swath Summary</b> 100 km [Max Swath: 100 km] <b>Accuracy Summary</b> Landscape topography: 3 m, Bathymetry: 0.3 m, Sea ice type: 3 classes <b>Waveband Summary</b> Microwave: 5.3 GHz, C band, VV polarisation, bandwidth 15.5 ± 0.06 MHz	All-weather images of ocean, ice and land surfaces. Monitoring of coastal zones, polar ice, sea state, geological features, vegetation (including forests), land surface processes, hydrology.
S2	ERS-1 SAR Active Microwave Instrumentation. Wave mode	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/GGGWBR8RVDC_index_0.html">http://www.esa.int/esaEO/GGGWBR8RVDC_index_0.html</a>	Mission: Completed Timeframe: Launch Date: 17 Jul 1991 EOL Date: 07 Mar 2000 Instrument: Not Operational	Imaging microwave radars	<b>Resolution Summary</b> 30 m [Best Resolution: 30m] <b>Accuracy Summary</b> Sea surface wind speed: 3 m/s, Significant wave height: 0.2 m <b>Waveband Summary</b> Microwave: 5.3 GHz (C-band), VV polarisation	Measurements of ocean wave spectra
S3	ERS-2 SAR Active Microwave Instrumentation. Image Mode	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/SEM">http://www.esa.int/esaEO/SEM</a>	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> 30 m [Best Resolution: 30m] <b>Swath Summary</b> 100 km [Max Swath: 100 km] <b>Accuracy Summary</b> Landscape topography: 3 m, Bathymetry: 0.3 m, Sea ice type: 3 classes <b>Waveband Summary</b> Microwave: 5.3 GHz, C band, VV polarisation, bandwidth 15.5 ± 0.06 MHz	All-weather images of ocean, ice and land surfaces. Monitoring of coastal zones, polar ice, sea state, geological features, vegetation (including forests), land surface processes, hydrology.

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			<a href="#">GWH2VQUD_index_0_m.h4tml</a>				
S4	ERS-2 SAR Active Microwave Instrumentation. Wave mode	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/SEM_GWH2VQUD_index_0_m.html">http://www.esa.int/esaEO/SEM_GWH2VQUD_index_0_m.html</a>	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> 30 m <i>[Best Resolution: 30m]</i> <b>Accuracy Summary</b> Sea surface wind speed: 3 m/s, Significant wave height: 0.2 m <b>Waveband Summary</b> Microwave: 5.3 GHz (C-band), VV polarisation	Measurements of ocean wave spectra
S5	ENVISAT ASAR Advanced Synthetic-Aperture Radar	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://envisat.esa.int/">http://envisat.esa.int/</a>	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> Image, wave and alternating polarisation modes: approx 30 x 30 m, Wide swath mode: 150 x 150 m, Global monitoring mode: 950 m x 950 m <i>[Best Resolution: 30m]</i> <b>Swath Summary</b> Image and alternating polarisation modes: up to 100 km, Wave mode: 5 km, Wide swath and global monitoring modes: 400 km or more <i>[Max Swath: 400 km]</i> <b>Accuracy Summary</b> Radiometric resolution in range: 1.5 - 3.5 dB, Radiometric accuracy: 0.65 dB <b>Waveband Summary</b> Microwave: C-band, with choice of 5 polarisation modes (VV, HH, VV/HH, HV/HH, or VH/VV)	All-weather images of ocean, land and ice for monitoring of land surface processes, sea and polar ice, sea state, and geological and hydrological applications. Has 2 stripmap modes (Image and Wave (for ocean wave spectra)) and 3 ScanSAR modes
S6	Sentinel-1A C-Band SAR	Owner & Distributor ESA/EC	Type: Sun-synchronous Altitude: 693 km Period: 98.74 mins Inclination: 98.19 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.esa.int/esaLP/LPgm">http://www.esa.int/esaLP/LPgm</a>	Mission : Future Timeframe: Planned Launch Date: 01 Nov 2011 Planned EOL Date: 01 Nov 2018 Instrument: Not Operational	Imaging microwave radars	<b>Resolution Summary</b> Strip mode: 5 x 5 m, Interferometric wide swath mode: 5 x 20 m, extra-wide swath mode: 25 x 100 m (3 looks), wave mode: 5 x 20 m <i>[Best Resolution: 5m]</i> <b>Swath Summary</b> Strip mode: 80 km; Interferometric wide swath mode: 250 km, extra-wide swath mode: 400 km, Wave mode: sampled images of 20 x 20 km at 100 km intervals	Marine core services, land monitoring and emergency services. Monitoring sea ice zones and arctic environment. Surveillance of marine environment, monitoring land surface motion risks, mapping of land surfaces (forest, water and soil, agriculture), mapping in support of humanitarian aid

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			<a href="#">es.html</a>			<i>[Max Swath: 400 km]</i> <b>Accuracy Summary</b> NESZ: -22 dB; PTAR: -25 dB; DTAR: -22 dB; Radiometric accuracy 1 dB (3 sigma); Radiometric stability: 0.5 dB (3 sigma) <b>Waveband Summary</b> C-band: 5.405 GHz, HH, HV, VH, VV, Incidence angle: 20-45	in crisis situations
S7	Sentinel-1B C-Band SAR	Owner & Distributor: ESA/EC	Same as Sentinel-1A	Mission : Future Timeframe: Planned Launch Date: 01 Jul 2012 Planned EOL Date: 01 Jul 2019 Instrument: Not Operational	Same as Sentinel-1A	Same as Sentinel-1A	Same as Sentinel-1A
S8	TerraSAR-X X-Band Synthetic Aperture Radar	Owner & Distributor: DLR	Type: Sun-synchronous Altitude: 514 km Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: 11 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.terrasar.de/">http://www.terrasar.de/</a>	Mission: On-going Timeframe: Launch Date: 15 Jun 2007 Planned EOL Date: 01 Jan 2013 Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> Spotlight: 1.2 x 1 - 4 m Stripmap: 3 x 3 - 6 m ScanSAR: 16 x 16 m <i>[Best Resolution: 4m]</i> <b>Swath Summary</b> Spotlight: 5-10km x 10 km, Stripmap: 30 km, ScanSAR: 100 km <i>[Max Swath: 100 km]</i> <b>Waveband Summary</b> 9.65 GHz, 300 MHz bandwidth, all 4 polarisation modes	High resolution images for monitoring of land surface and coastal processes and for agricultural, geological and hydrological applications
S9	TerraSAR-X2 X-Band Synthetic Aperture Radar	Owner & Distributor: DLR	Same as TerraSAR-X	Mission: Future Timeframe: Planned Launch Date : 01 Jan 2013 Planned EOL Date: 01 Jan 2018 Instrument: Not Operational	Same as TerraSAR-X	Same as TerraSAR-X	Same as TerraSAR-X
S10	TanDEM-X X-Band Synthetic	Owner & Distributor:	Type: Sun-synchronous Altitude: 514 km	Mission: Ongoing	Imaging microwave radars	Same as TerraSAR-X	Same as TerraSAR-X

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Aperture Radar	DLR	Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: 11 days LST: Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.dlr.de/hr/desktopdefault.aspx/tabid-2317/3669_read-5488/">http://www.dlr.de/hr/desktopdefault.aspx/tabid-2317/3669_read-5488/</a>	Timeframe: Launch Date: 21 June 2010 Planned EOL Date: 31 Dec 2014 Instrument: Operational			
S11	COSMO-SkyMed 1 SAR 2000	Owner & Distributor: ASI/e-GEOS	Type: Sun-synchronous Altitude: 622 km Period: 97.15 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.asi.it/SiteEN/ContentSite.aspx?Area=Osservare+la+Terra">http://www.asi.it/SiteEN/ContentSite.aspx?Area=Osservare+la+Terra</a>	Mission: On-going Timeframe: Launch Date: 08 Jun 2007 Planned EOL Date: 08 Jun 2014 Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> Single polarisation mode; Stripmap: few metres, ScanSAR: from few tens to several tens of metres; Frame: resolution: order of 1 m; Two polarisation mode: PING PONG: few metres <b>[Best Resolution: 1m] Swath Summary</b> Single polarisation modes: Stripmap (40 x 40 km), ScanSAR (100 x 100 km or 200 x 200 km), Spotlight (10 x 10 km); Two polarisation modes: PING PONG (30 x 30 km) <b>[Max Swath: 200 km] Waveband Summary</b> Microwave: X-band, with choice of 4 polarisation modes (VV, HH, VV/HH, HV/HH).	All-weather images of ocean, land and ice for monitoring of land surface processes, ice, environmental monitoring, risk management, environmental resources, maritime management, Earth topographic mapping
S12	COSMO-SkyMed 2 SAR 2000	Owner & Distributor: ASI/e-GEOS	Same as COSMO-SkyMed 1	Mission: On-going Timeframe: Launch Date: 09 Dec 2007 Planned EOL Date: 09 Dec 2014 Instrument: Operational	Same as COSMO-SkyMed 1	Same as COSMO-SkyMed 1	Same as COSMO-SkyMed 1
S13	COSMO-SkyMed 3 SAR 2000	Owner & Distributor: ASI/e-GEOS	Same as COSMO-SkyMed 1	Mission: On-going Timeframe: Launch Date: 27 Oct 2008	Same as COSMO-SkyMed 1	Same as COSMO-SkyMed 1	Same as COSMO-SkyMed 1

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Planned EOL Date: 27 Oct 2015 Instrument: Operational			
S14	COSMO-SkyMed 4 SAR 2000	Owner & Distributor: ASI/e-GEOS	Same as COSMO-SkyMed 1	Mission: Future Timeframe: Planned Launch Date: 08 Sep 2010 Planned EOL Date: 08 Sep 2016 Instrument: Not Operational	Same as COSMO-SkyMed 1	Same as COSMO-SkyMed 1	Same as COSMO-SkyMed 1
S15	ALOS Advanced Land Observing Satellite PALSAR	Owner: JAXA  Agreement with ESA	Type: Sun-synchronous Altitude: 692 km Period: 98.7 mins Inclination: 98.16 deg Repeat cycle: 46 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.jaxa.jp/projects/sat/alos/index_e.html">http://www.jaxa.jp/projects/sat/alos/index_e.html</a>	Mission: On-going Timeframe: Launch Date: 24 Jan 2006 Planned EOL Date: 01 Sep 2010 Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> (depending on looks, incident angle and bandwidth) Hi-res: 7 - 44 m or 14 - 88 m, ScanSAR mode: 35 - 77 m or 70 - 154 m, Polarimetry: 24 - 88 m [ <i>Best Resolution: 7m</i> ] <b>Swath Summary</b> High resolution mode: 70 km, Scan SAR mode: 250 - 360 km, Polarimetry: 30 km [ <i>Max Swath: 360 km</i> ] <b>Accuracy Summary</b> Surface Resolution: 10 m (Fine Mode); Surface Resolution: 100 m (Scan Mode); Radiometric: ±1 dB <b>Waveband Summary</b> Microwave: L-Band 1270 MHz	High resolution microwave imaging of land and ice for use in environmental monitoring, agriculture and forestry, disaster monitoring, Earth resource management and interferometry
S16	ALOS Advanced Land Observing Satellite 2 PALSAR	Owner: JAXA  Agreement with ESA (TBC)	Type: Sun-synchronous Altitude: 628 km Period: 100 mins Inclination: 97.9 deg Repeat cycle: 14 days LST: 12:00 Longitude (if geo): Asc/desc: Descending URL: N.A.	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2012 Planned EOL Date: 01 Jan 2017 Instrument: Not Operational	Same as ALOS	Same as ALOS	Same as ALOS

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
S17	Radarsat-1 Synthetic Aperture Radar (CSA) C band	Owner & Distributor: CSA  Distributor: e-GEOS	Type: Sun-synchronous Altitude: 798 km Period: 100.7 mins Inclination: 98.594 deg Repeat cycle: 24 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.asc-csa.gc.ca/eng/satellites/radarsat1/default.asp">http://www.asc-csa.gc.ca/eng/satellites/radarsat1/default.asp</a>	Mission: On-going  Timeframe:  Launch Date: 04 Nov 1995  Planned EOL Date: 31 Mar 2012  Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> Standard: 25 x28 m (4 looks), Wide beam (1/2):48-30 x 28m/32 - 25 x 28 m (4 looks), Fine resolution: 11 - 9 x 9 m (1 look), ScanSAR (N/W): 50 x 50 m/100 x 100 m (2 - 4/4 - 8 looks), Extended (H/L): 22 - 19 x 28 m/63 - 28 x 28 m (4 looks) <b>Swath Summary</b> Standard: 100 km Wide: 150 km Fine: 45 km ScanSAR Narrow: 300 km ScanSAR Wide: 500 km Extended (H): 75 km Extended (L): 170 km Wide: 150 km Fine: 45 km ScanSAR Narrow: 300 km ScanSAR Wide: 500 km Extended (H): 75 km Extended (L): 170 km <b>Accuracy Summary</b> Geometric distortion: < 40 m, Radiometric: 1.0 dB <b>Waveband Summary</b> Microwave: C band: 5.3 GHz, HH polarisation	All-weather images of ocean, ice and land surfaces. Used for monitoring of coastal zones, polar ice, sea ice, sea state, geological features, vegetation and land surface processes
S18	Radarsat-2 Synthetic Aperture Radar (CSA) C band	Owner: MDA/RSI  Distributor: e-GEOS  Agreement with CSA	Type: Sun-synchronous Altitude: 798 km Period: 100.7 mins Inclination: 98.6 deg Repeat cycle: 24 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.asc-csa.gc.ca/eng/satellites/radarsat2/default.asp">http://www.asc-csa.gc.ca/eng/satellites/radarsat2/default.asp</a>	Mission: On-going  Timeframe:  Launch Date: 14 Dec 2007  Planned EOL Date: 17 Apr 2015  Instrument: Operational	Imaging microwave radars	<b>Resolution Summary</b> Standard: 25 x 28 m (4 looks), Wide beam (1/2):40 - 26 x 28 m/32 - 25 x 28 m (4 looks), Fine resolution: 11-9 x 9 m (1 look), ScanSAR (N/W): 50 x 50 m/100 x 100 m (4/8 looks), Extended (H/L): 22 - 19 x 28 m/ 63 - 28 x 28 m (4 looks), Ultrafine: 3 m; Fine Quad-Pol: 11 x 9 m (1 look); Standard Quad-Pol: 25 x 28 m (4 looks); Multi-look Fine: 11 x 9 m (4 look) [ <i>Best Resolution: 25m</i> ] <b>Swath Summary</b> Standard: 100 km (20 - 49 deg), Wide beam (1/2): 165 km/150 km (20 - 31/31 - 39 deg), Fine resolution: 50 km (37 - 48 deg), ScanSAR (W): 500 km (20 - 49 deg), Extended (H/L): 70 km/170 km (50 - 60/10 - 23 deg), Ultrafine: 20 km; Quad-Pol (Standard and Fine): 25 km; Multi-look Fine: 50 km [ <i>Max Swath: 500 km</i> ] <b>Accuracy Summary</b> Radiometric	All-weather images of ocean, ice and land surfaces. Used for monitoring of coastal zones, polar ice, sea ice, sea state, geological features, vegetation and land surface processes

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
						Accuracy: 1.0 dB  <b>Waveband Summary</b> Microwave: C band 5.405 GHz: HH, VV, HV, VH polarisation - includes fully polarimetric imaging modes, and left- and right-looking capability	
S19	Radarsat Constellation Mission (RCM)1 Synthetic Aperture Radar - CSA RADARSAT Constellation	Owner & Distributor: CSA	Type: Sun-synchronous Altitude: 600 km Period: 96.5 mins Inclination: 97.7 deg Repeat cycle: 12 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.asc-csa.gc.ca/eng/satellites/radarsat/default.asp">http://www.asc-csa.gc.ca/eng/satellites/radarsat/default.asp</a>	Mission: Future Timeframe: Planned Launch Date: 06 Dec 2013 Planned EOL Date: 01 Apr 2020 Instrument: Not Operational	Imaging microwave radars	<b>Resolution Summary</b> Low Resolution: 100 x 100 m (8 looks); Medium Resolution: 50 x 50 m (4 looks); Medium Resolution Land: 16 x 16 m (4 looks); Medium Resolution Land ScanSAR: 30 x 30 m (4 looks); High-Resolution: 5 x 5 m (1 look); Very High Resolution: 3 x 3 m (1 look); Ice-Oil Low Noise: 100 x 100 m (8 looks); Ship Detection Mode: Variable; <i>[Best Resolution: 5m]</i> <b>Swath Summary</b> Low Resolution: 500 km; Medium Resolution: 350 km; Medium Resolution Land: 30 km; Medium Resolution Land ScanSAR: 125 km; High-Resolution: 30 km; Very High Resolution: 20 km; Ice-Oil Low Noise: 350 km; Ship Detection Mode: 350 km <i>[Max Swath: 350 km]</i> <b>Accuracy Summary</b> Radiometric Accuracy: 1.0 dB <b>Waveband Summary</b> Microwave: C band 5.405 GHz: HH, VV, HV, VH polarisation - includes fully polarimetric imaging modes.	All-weather, C-band data to support ecosystem monitoring, maritime surveillance and disaster management.
S20	Radarsat Constellation Mission (RCM)2 Synthetic Aperture Radar - CSA RADARSAT Constellation	Owner & Distributor: CSA	Same as RCM 1	Mission: Future Timeframe: Planned Launch Date: 14 Mar 2015 Planned EOL Date: 01 Feb 2021 Instrument: Not Operational	Same as RCM 1	Same as RCM 1	Same as RCM 1

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
S21	Radarsat Constellation Mission (RCM)3 Synthetic Aperture Radar - CSA RADARSAT Constellation	Owner & Distributor: CSA	Same as RCM 1	Mission: Future Timeframe: Planned Launch Date: 06 Jul 2016 Planned EOL Date: 01 Apr 2022 Instrument: Not Operational	Same as RCM 1	Same as RCM 1	Same as RCM 1
S22	SAOCOM 1A Radar L-Band Synthetic Aperture Radar	Owner: CONAE  Agreement with ASI	Type: Sun-synchronous Altitude: 620 km Period: 97.2 mins Inclination: 97.89 deg Repeat cycle: 16 days LST: 6:12 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.conae.gov.ar/">http://www.conae.gov.ar/</a>	Mission: Future Timeframe: Planned Launch Date: 01 Jun 2012 Planned EOL Date: 01 Jun 2017 Instrument: Not Operational	Imaging microwave radars	<b>Resolution Summary</b> 10 x 10 m – 100 x 100 m [Best Resolution: 10m] <b>Swath Summary</b> 20 – 350 km [Max Swath: 350 km] <b>Accuracy Summary</b> 0.5 dB <b>Waveband Summary</b> L-band (1.275 GHz).	Land, ocean, emergencies, soil moisture, interferometry, others
S23	SAOCOM 1B Radar L-Band Synthetic Aperture Radar	Owner: CONAE  Agreement with ASI	Same as SAOCOM 1A	Mission: Future Timeframe: Planned Launch Date: 01 Dec 2012 Planned EOL Date: 01 Dec 2017 Instrument: Not Operational	Same as SAOCOM 1A	Same as SAOCOM 1A	Same as SAOCOM 1A
S24	SAOCOM 2A Radar L-Band Synthetic Aperture Radar	Owner: CONAE  Agreement with ASI	Type: Sun-synchronous Altitude: 620 km Period: Inclination: 98 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.conae.gov.ar/">http://www.conae.gov.ar/</a>	Mission: Future Timeframe Planned Launch Date: 01 Jan 2014 Planned EOL Date: 01 Jan 2019 Instrument: Not Operational	Same as SAOCOM 1A	Same as SAOCOM 1A	Same as SAOCOM 1A

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
S25	SAOCOM 2B Radar L-Band Synthetic Aperture Radar	Owner: CONAE  Agreement with ASI	Same as SAOCOM 2A	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2015 Planned EOL Date: 01 Jan 2020 Instrument: Not Operational	Same as SAOCOM 1A	Same as SAOCOM 1A	Same as SAOCOM 1A
S26	JERS-1 SAR L-band Synthetic Aperture Radar	Owner: JAXA  Agreement with ESA	Type: Sun-synchronous Altitude: 570 km Period: 96 mins Inclination: 98 deg Repeat cycle: 44 days LST: 10:45 Longitude (if geo): Asc/desc: Descending URL: not available	Mission: Completed Timeframe: Launch Date: 11 Feb 1992 EOL Date: 12 Oct 1998 Instrument: Not Operational	Imaging microwave radars	<b>Resolution Summary</b> 18m (range) × 18m (azimuth at 3 looks) <b>Swath Summary</b> 75 km <b>Accuracy Summary</b> Surface Resolution: 18 m <b>Waveband Summary</b> Microwave: L-Band 1275 MHz	High resolution microwave imaging of land and ice for use in environmental monitoring, agriculture and forestry, disaster monitoring, Earth resource management and interferometry
S27	SEASAT Synthetic Aperture Radar (SAR) L-band	Owner: NASA/JPL  Agreement with ESA	Satellite Altitude 800 km Nearly circular 800 km orbit with an inclination of 108 degrees. Fourteen Earth orbits were Completed each day.	Mission: Completed Timeframe: Launch Date: June 28, 1978 EOL Date: October 10, 1978 Instrument: Not Operational	Imaging microwave radars	Radar Frequency 1.275 GHz (L-band) Radar Wavelength 23.5 cm System Bandwidth 19 MHz Theoretical Resolution on the Surface 25 m (azimuth) x 25 m (range) Number of Looks 4 Swath Width 100 km Antenna Dimensions 10.74 m x 2.16 m Antenna Look Angle 20 degrees from vertical Incidence angle on the surface 23 degrees +/- 3 degrees across the swath Polarization Horizontal transmit, Horizontal receive (HH) Transmitted Pulse Length 33.4 microseconds Pulse repetition frequency (PRF) 1463-1640 Hz Transmitted peak power 1.0 kW Data recorder bit rate (on the ground) 110 Mbits/s (5 bits/word)	Seasat was the first Earth-orbiting satellite designed for remote sensing of the Earth's oceans.  Synthetic Aperture Radar (SAR) L-band, HH polarization, fixed look angle to monitor the global surface wave field and polar sea ice conditions.
S28	SRTM X-SAR X-SAR is working in X-	Owner & Distributor: ASI, DLR	The Shuttle orbit supported only measurements between 54 ° S and 60 ° N. More northern and southern latitudes are	Mission Completed Timeframe: Launch Date: February 11	Imaging microwave radars	Swath: 50 km X-Band (3cm wavelength)	X-SAR/SRTM was an innovative way of collecting highly accurate topographic information using spaceborne

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Band		<p>outside the area of visibility.</p> <p>The orbit of the SRTM Mission was designed to cover almost of the land mass between 54 ° S and 60 ° N by the ground swathes of the US SIR-C instrument. Due to the smaller X-SAR ground swathes - a result of the higher resolution - gaps between the ground tracks are unavoidable. Additional gaps are caused by shuttle maneuvering, for which the radars are switched off.</p> <p><a href="http://www.dlr.de/srtm/level1/start_en.htm">http://www.dlr.de/srtm/level1/start_en.htm</a></p>	<p>2000</p> <p>EOL Date: 11 days post launch</p> <p>Instrument: Not Operational</p>		<p>Resolution: 25 m</p> <p>X-SAR is working in X-Band at 8.8 GHz. DEM coding standard is DTED-2, the resolution is 1 arcsec.</p>	<p>radar instruments. A deployable mast of 60-m length carried a second set of receiving antennas at its tip allowing three dimensional viewing of the earth's surface.</p> <p>The registered radar images have been converted to digital elevation models (DEM) covering the globe between 60° North and 58° South.</p>
S29	SIR-C X-SAR (Shuttle Imaging Radar with Payload C / X-SAR)	Owner & Distributor: ASI, DLR	<p>The Shuttle orbit supported only measurements between 54 ° S und 60 ° N. More northern and southern latitudes are outside the area of visibility.</p> <p>The orbit of the SRTM Mission was designed to cover almost of the land mass between 54 ° S and 60 ° N by the ground swathes of the US SIR-C instrument. Due to the smaller X-SAR ground swathes - a result of the higher resolution - gaps between the ground tracks are unavoidable. Additional gaps are caused by shuttle maneuvering, for which the radars are switched off.</p>	<p>Mission Completed</p> <p>Timeframe:</p> <p>Launch Date: 9 April 1994 (Launch 1) and 30 September 1994 (Launch 2)</p> <p>EOL Date: 20 April 1994 (Launch 1) and 11 October 1994 (Launch 2)</p> <p>Instrument: Not Operational</p>	Imaging microwave radars	<p>Three individual antennas:</p> <p style="padding-left: 40px;">L-band (23.5cm wavelength),</p> <p style="padding-left: 40px;">C-band (5.8cm wavelength)</p> <p style="padding-left: 40px;">X-band (3cm wavelength).</p> <p>SRTM carried two different and independent radar sensors: the US SIR-C and the German-Italian X-SAR. SIR-C working in C-Band at 2.2 GHz. The DEMs are coded according DTED-1 standard; resolution is 3 arcsec. These DEMs are also known as "90m DEMs".</p>	<p>The SIR-C/X-SAR payload was a cooperative NASA/JPL, DARA/DLR, and ASI project flown on Space Shuttle Endeavour. This payload/mission is also known under the name of SRL (Space Radar Laboratory). It consisted of a radar antenna structure and associated radar system hardware designed to fit inside the Space Shuttle's cargo bay. Two Shuttle missions were conducted, each of 10 days duration. It was the first spaceborne radar system capable to obtain simultaneous multifrequency (3) and multipolarization radar imagery.</p>
S30	PAZ X Band Synthetic Aperture Radar	Owner & Distributor: CDTI	<p>Type: Sun-synchronous</p> <p>Altitude: 510 km</p> <p>Period: 90 mins</p> <p>Inclination: 98 deg</p> <p>Repeat cycle:</p>	<p>Mission: Future</p> <p>Timeframe:</p> <p>Planned launch Date: 31 Dec</p>	Imaging microwave radars	<p><b>Resolution Summary</b> Resolution will move between &lt;1m and 15 m depending on acquisition modes  <i>[Best Resolution: 1m]</i> <b>Swath Summary</b>        Swath will vary according to the</p>	<p>High resolution x-band radar for security, land use, urban management, environmental monitoring, risk management. Different acquisition modes:</p>

Ref Nr.	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			LST: Longitude (if geo): Asc/desc: Ascending URL: Not Available	2011  Planned EOL Date: 31 Dec 2016  Instrument: Not Operational		acquisition mode: 5x5 km to 100 km x 100 km . [Max Swath: 100 km] <b>Accuracy Summary</b> "Pixel Localization: 1,1 m to 8.5 m (1 $\sigma$ ) depending of the mode. <b>Waveband Summary</b> The Radar will use a frequency close to 9.65 GHz	Spotlight (5x5-10 km SSD =<1m), Scansar (100 x100 km, SSD <=15m); Stripmode(strips of 30x30km with SSD 3 m)
S31	SABRINA  Synthetic Aperature Radar (SABRINA)	Owner & Distributor:  ASI	Type: Sun-synchronous Altitude: 622 km Period: 97.15 mins Inclination: 97.8 deg Repeat cycle: 16 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: Not Available	Mission: Future  Timeframe:  Planned Launch Date: 20 Apr 2012  Planned EOL Date: 08 Sep 2016  Instrument: Not Operational	Imaging microwave radars	<b>Waveband Summary</b> Microwave: X-band, with choice of 4 polarisation modes (VV, HH, VV/HH, HV/HH).	All-weather images of ocean, land and ice for monitoring of land surface processes, ice, environmental monitoring, risk management, environmental resources, maritime management, Earth topographic mapping and DEM, moving target indication
S32	GMES SPACE COMPONENT DATA ACCESS - SAR Data from several GMES Contributing Missions	Distributor:  ESA	Various orbits	Missions: Ongoing GMES Contributing Missions	Imaging microwave radars	Various Characteristics	Various Applications

## 2.2 High and Very High resolution SAR. Table 2

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
S1	ERS-1 SAR Active Microwave Instrumentation. Image Mode	Most of the world	ESA: Infoterra: Jul 1991 - Mar 2000 Oberpfaffenhofen: Jul 1991 - Mar 2000 ESRIN: Jul 1991 – Mar 2000 Matera: Jul 1991 – Mar 2000 Tromso: 1991 - 1996	ESA: Infoterra Farnborough Volume: 52 TB ESA: DLR Oberpfaffenhofen Volume: 51 TB for all ERS-1/-2 ESA ESRIN Frascati: Volume: 70 TB ESA: ASI Matera Volume: 28.85 TB ESA: KSAT Tromso Volume: 76 TB	Level 0: WILMA Ongoing archive conversion to SAFE	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
S2	ERS-1 SAR Active Microwave Instrumentation. Wave mode	Most of the world	ESA: Infoterra: Jul 1991 - Mar 2000 Oberpfaffenhofen: Jul 1991 - Mar 2000 ESRIN: Jul 1991 – Mar 2000 Matera: Jul 1991 – Mar 2000 ESA Brest: Aug 1991 – Jun 1996 Tromso: 1991 - 1996	ESA: Infoterra Farnborough Volume: included above ESA: DLR Oberpfaffenhofen Volume 51 TB for all ERS-1/-2 ESA ESRIN Frascati: Volume: included above ESA: ASI Matera Volume: included above ESA: Ifremer Brest Volume: 5 TB only WAVE mode ESA: KSAT Tromso Volume: included above	Level 0: WILMA Ongoing archive conversion to SAFE	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
S3	ERS-2 SAR Active Microwave	Most of the world	ESA: Infoterra: May 1995 – to	ESA: Infoterra Farnborough Volume: 72 TB	Level 0: WILMA Ongoing archive	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>	ESA: V. Beruti, M. Albani

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
	Instrumentation. Image Mode		date Oberpfaffenhofen: May 1995 – to date Matera: May 1995 – to date ESRIN: May 1995 – to date Tromso: 1999 – to date Maspalomas: Oct 1998 – to date	ESA: DLR Oberpfaffenhofen Volume: 51 TB for all ERS-1/-2 ESA: ASI Matera Volume: 77.36 TB ESA ESRIN Frascati: Volume: 90 TB ESA KSAT Tromso: Volume: 157 TB ESA: INSA Maspalomas Volume: 7 TB (backup)	conversion to SAFE	<a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a> On-line archives: <a href="https://oa-ip.eo.esa.int/ra/">https://oa-ip.eo.esa.int/ra/</a> <a href="https://oa-ks.eo.esa.int/ra/">https://oa-ks.eo.esa.int/ra/</a>	
S4	ERS-2 SAR Active Microwave Instrumentation. Wave mode	Most of the world	ESA: Infoterra: May 1995 – to date Oberpfaffenhofen: May 1995 – to date Matera: May 1995 – to date ESRIN: May 1995 – to date Tromso: 1999 – to date Maspalomas: Oct 1998 – to date ESA Brest: Oct 1995 – to date	ESA: Infoterra Farnborough Volume: included above ESA: DLR Oberpfaffenhofen Volume: 51 TB for all ERS-1/-2 ESA: ASI Matera Volume: included above ESA ESRIN Frascati: Volume: included above ESA KSAT Tromso: Volume: included above ESA: INSA Maspalomas Volume: included above (backup) ESA: Ifremer Brest Volume: 6 TB only WAVE mode	Level 0: WILMA Ongoing archive conversion to SAFE	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a> On-line archives: <a href="https://oa-ip.eo.esa.int/ra/">https://oa-ip.eo.esa.int/ra/</a> <a href="https://oa-ks.eo.esa.int/ra/">https://oa-ks.eo.esa.int/ra/</a>	ESA: V. Beruti, M. Albani
S5	ENVISAT ASAR Advanced Synthetic-Aperture Radar	Worldwide coverage	ESA: Infoterra: May 2002 – to date Oberpfaffenhofen: May	ESA: Infoterra Farnborough Volume: 357 TB ESA: DLR Oberpfaffenhofen Volume:	Level 0: ASAR RAW Ongoing archive conversion to SAFE	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			2002 – to date Matera: May 2002 – to date Tromso: 2002 – to date Kiruna: May 2002 – to date ESA Brest: Nov 2002 – to date	380 TB ESA: ASI Matera Volume 356 TB ESA: KSAT Tromso Volume: 175 TB ESA: Kiruna Salmijarvi Volume: 111 TB ESA: Ifremer Brest Volume: 16.3 TB		On-line archives: <a href="https://oa-es.eo.esa.int/ra/">https://oa-es.eo.esa.int/ra/</a> <a href="https://oa-ks.eo.esa.int/ra/">https://oa-ks.eo.esa.int/ra/</a> <a href="https://oa-ip.eo.esa.int/ra/">https://oa-ip.eo.esa.int/ra/</a>	
S6	Sentinel-1A C-Band SAR	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
S7	Sentinel-1B C-Band SAR	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
S8	TerraSAR-X X-Band Synthetic Aperture Radar	Worldwide coverage	June 2007 - to date	DLR Oberpfaffenhofen Volume: 80 TB	Level 0: Instrument source packets Level 1: COSAR (complex), Geotiff (detected) Level 2: Geotiff	<a href="http://eoweb.dlr.de/">http://eoweb.dlr.de/</a>	DLR: E. Mikusch
S9	TerraSAR-X2 X-Band Synthetic Aperture Radar	N.A.	N.A.	DLR Oberpfaffenhofen Volume: N.A.	Level 0: Instrument source packets Level 1: COSAR (complex), Geotiff (detected) Level 2: Geotiff	TBD	DLR: E. Mikusch
S10	TanDEM-X X-Band Synthetic Aperture Radar	N.A.	N.A.	DLR Oberpfaffenhofen Volume: N.A.	Level 0: Instrument source packets Level 1: COSAR (complex), Geotiff	<a href="http://eoweb.dlr.de/">http://eoweb.dlr.de/</a>	DLR: E. Mikusch

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
					(detected) Level 2: Geotiff		
S11	COSMO-SkyMed 1 SAR 2000	Worldwide coverage	June 2007 - to date	ASI Matera Volume: 26 TB in total for the first three satellites	Level 0F	<a href="https://www.cosmo-skymed.it/CUUI-EN/index.htm">https://www.cosmo-skymed.it/CUUI-EN/index.htm</a> Scientific Users (Registration to the site needed, submitted to ASI approval) <a href="http://www.e-geos.it/">http://www.e-geos.it/</a> : Commercial Users	ASI: M. Calabrese
S12	COSMO-SkyMed 2 SAR 2000	Worldwide coverage	December 2007 - to date	ASI Matera Volume: 26 TB in total for the first three satellites	Level 0F	Same as COSMO-SkyMed 1	ASI: M. Calabrese
S13	COSMO-SkyMed 3 SAR 2000	Worldwide coverage	October 2008 - to date	ASI Matera Volume: 26 TB in total for the first three satellites	Level 0F	Same as COSMO-SkyMed 1	ASI: M. Calabrese
S14	COSMO-SkyMed 4 SAR 2000	N.A.	N.A.	ASI Matera Volume: N.A.	Level 0F	Same as COSMO-SkyMed 1	ASI: M. Calabrese
S15	ALOS Advanced Land Observing Satellite PALSAR	European coverage North African coverage Part of Antarctica	ESA: Tromso: May 2006 – to date Matera: May 2006 – to date ESRIN: Apr 2006 – to date	ESA: KSAT Tromso Volume: 41 TB ESA: ASI Matera Volume: 94.27 TB ESA: ESRIN Frascati Volume: 25 TB	Level 0: CEOS	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
S16	ALOS Advanced Land Observing Satellite 2	N.A.	N.A.	TBD	TBD	TBD	TBD

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
	PALSAR						
S17	Radarsat-1 Synthetic Aperture Radar (CSA) C band	CSA: Worldwide coverage  e-GEOS: Visibility of Matera cone + eventual other orders outside the cone, but still downlinked at Matera	CSA: 1995 – to date  e-GEOS: Since 1 <sup>st</sup> July 2010	CSA: CCRS Ottawa Volume: 300 TB  CSA: ASF Volume: 230 TB  CSA Network stations Volume: 133 TB  e-GEOS: Matera Volume: Few GB	CSA: Level 0: RFC Buffer  e-GEOS: Level 0	CSA: Through MDA/GSI. Can be seen through CEOCAT <a href="http://ceocat.ccrs.nrcan.gc.ca/portal/index.html">http://ceocat.ccrs.nrcan.gc.ca/portal/index.html</a>  e-GEOS: <a href="http://www.e-geos.it/">http://www.e-geos.it/</a>	CSA: C. Giguère  e-GEOS: Riccardo Sala
S18	Radarsat-2 Synthetic Aperture Radar (CSA) C band	CSA: Worldwide coverage  e-GEOS: Visibility of Matera cone + eventual other orders outside the cone, but still downlinked at Matera	CSA: 2007 – to date  e-GEOS: Since 1 <sup>st</sup> July 2010	CSA: CCRS Ottawa Volume: 120 TB  CSA Network stations (6 stations) Volume: 12 TB  e-GEOS: Matera Volume: Few GB	CSA: Level 0: FRED  e-GEOS: Level 0	CSA: Through MDA/GSI. Can be seen through CEOCAT <a href="http://ceocat.ccrs.nrcan.gc.ca/portal/index.html">http://ceocat.ccrs.nrcan.gc.ca/portal/index.html</a>  e-GEOS: <a href="http://www.e-geos.it/">http://www.e-geos.it/</a>	CSA: C. Giguère  e-GEOS: Riccardo Sala
S19	Radarsat Constellation Mission (RCM)1 Synthetic Aperture Radar - CSA RADARSAT Constellation	N.A.	N.A.	CSA: CCRS (Ottawa) Volume N.A.	Level 0: FRED or SAFE (TBC)	TBD	CSA: C. Giguère
S20	Radarsat Constellation Mission (RCM)2 Synthetic Aperture Radar - CSA RADARSAT Constellation	N.A.	N.A.	CSA: CCRS (Ottawa) Volume N.A.	Level 0: FRED or SAFE (TBC)	TBD	CSA: C. Giguère

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
S21	Radarsat Constellation Mission (RCM)3 Synthetic Aperture Radar - CSA RADARSAT Constellation	N.A.	N.A.	CSA: CCRS (Ottawa) Volume N.A.	Level 0: FRED or SAFE (TBC)	TBD	CSA: C. Giguère
S22	SAOCOM 1A Radar L-Band Synthetic Aperture Radar	N.A.	N.A.	TBD	TBD	TBD	TBD
S23	SAOCOM 1B Radar L-Band Synthetic Aperture Radar	N.A.	N.A.	TBD	TBD	TBD	TBD
S24	SAOCOM 2A Radar L-Band Synthetic Aperture Radar	N.A.	N.A.	TBD	TBD	TBD	TBD
S25	SAOCOM 2B Radar L-Band Synthetic Aperture Radar	N.A.	N.A.	TBD	TBD	TBD	TBD
S26	JERS-1 SAR L-band Synthetic Aperture Radar	European coverage North African coverage Part of Antarctica	ESA: Matera Jul 1992 – Oct 1998	ESA: ASI Matera Volume: 11.02 TB plus 2919 HDDT tapes to be transcribed	Level 0: WILMA	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
S27	SEASAT	European partial coverage 200 orbits	ESA: Oberpfaffenhofen Jun 1978 – Oct 1978	ESA: DLR Oberpfaffenhofen Volume: 50 GB	Level 1 and 2 Johnson Space Center CCT format (PRI01); CEOS (PRI02)	Via DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	ESA: V. Beruti, M. Albani
S28	SRTM X-SAR	Worldwide coverage between 60°N and 54°S	DLR: February 2000	DLR Oberpfaffenhofen Volume: 17.4 TB ASI Matera Volume: TBD	Level 0: TBD Level 1: DTED (DEM, HEM), CEOS (Image	DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	DLR: E. Mikusch

Ref. Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
		with omissions	ASI: February 2000	TB	data) Level 2: CEOS	ASI: Off-line on request	ASI: M. Calabrese
S29	SIR-C X-SAR	Various locations globally, between 51.6°S and 51.6°N	DLR: April and October 1994  ASI: April and October 1994	DLR Oberpfaffenhofen Volume: 5.8 TB  ASI Matera Volume: TBD TB	Level 0: CEOS Level 1: CEOS Level 2: CEOS	DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>  ASI: <a href="http://genesi-dr.asi.it">http://genesi-dr.asi.it</a>	DLR: E. Mikusch  ASI: M. Calabrese
S30	Paz - X Band Synthetic Aperture Radar	N.A.	N.A.	CDTI: TBD Volume: N.A.	TBD	TBD	TBD
S31	SABRINA - Synthetic Aperture Radar	N.A.	N.A.	ASI Matera Volume: N.A.	TBD	TBD	TBD
S32	GSCDA SAR Data from several missions (Terrasar-X, Radarsat, Cosmo-skymed, etc..)	European and North African Coverage	Jan 2009 – to date	ESA ESRIN: 8.3 TB including Optical Sensors	Various formats	<a href="http://gmesdata.esa.int/web/gsc/home">http://gmesdata.esa.int/web/gsc/home</a>	ESA: V. Beruti, M. Albani

### 3. C2: HIGH AND VERY HIGH RESOLUTION MULTI-SPECTRAL IMAGING MISSIONS/SENSORS.

#### 3.1 High and Very high resolution multi-spectral imaging missions/sensors. Table 1

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
M1	SPOT 1 HRV (1) and HRV (2)	Owner: CNES Distributor: Spotimage Agreement with ESA	Type: Sun-synchronous Altitude: 832 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://smc.cnes.fr/SPOT/Fr/">http://smc.cnes.fr/SPOT/Fr/</a>	Mission; Completed Timeframe Launch Date: 22 Feb 1986 EOL Date: Nov 2003 Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> 10 m (panchromatic) or 20 m [Best Resolution: 10m] <b>Swath Summary</b> 117 km (i.e. 60 km + 60 km with 3 km overlap) - steerable up to $\pm 27$ deg off-track [Max Swath: 117 km] <b>Waveband Summary</b> VIS: B1:0.5 - 0.59 $\mu\text{m}$ , B2:0.61 - 0.68 $\mu\text{m}$ , NIR: B3:0.79 - 0.89 $\mu\text{m}$ , Panchromatic: VIS 0.51 - 0.73 $\mu\text{m}$	Each HRV instrument provides 60 x 60 km images for a range of land and coastal applications
M2	SPOT 2 HRV(1) and HRV (2)	Owner: CNES Distributor: Spotimage Agreement with ESA	Same as SPOT 1	Mission: Completed Timeframe: Launch Date: 22 Jan 1990 EOL Date: 30 Jun 2009 Instrument: Not Operational	Same as SPOT 1	Same as SPOT 1	Same as SPOT 1
M3	SPOT 3 HRV(1) and HRV (2)	Owner: CNES Distributor: Spotimage	Same as SPOT 1	Mission: Completed Timeframe: Launch Date : 25 Sep 1993 EOL Date: 14 Nov 1996 Instrument: Not Operational	Same as SPOT 1	Same as SPOT 1	Same as SPOT 1

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
M4	SPOT 4 HRVIR(1)	Owner: CNES Distributor: Spotimage	Type: Sun-synchronous Altitude: 832 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	Mission: On-going  Timeframe :  Launch Date: 24 Mar 1998  Instrument : Operational	High resolution optical imagers	<b>Resolution Summary</b> 10 m (0.64 $\mu$ m) or 20 m <i>[Best Resolution: 10m]</i> <b>Swath Summary</b> 117 km (i.e. 60 km + 60 km with 3 km overlap). Steerable up to $\pm 27$ deg off-track <i>[Max Swath: 117 km]</i> <b>Waveband Summary</b> VIS: B1: 0.50 - 0.59 $\mu$ m, B2: 0.61 - 0.68 $\mu$ m, NIR: 0.79 - 0.89 $\mu$ m, SWIR: 1.58 - 1.75 $\mu$ m, Panchromatic:(B2) 0.61 - 0.68 $\mu$ m	Each HRVIR instrument provides 60 x 60 km images for a range of land and coastal applications
M5	SPOT 4 HRVIR(2)	Owner: CNES Distributor: Spotimage	Same as above	Mission: On-going  Timeframe :  Launch Date: 24 Mar 98  Planned EOL Date: N.A.  Instrument : Operational	Same as above	<b>Resolution Summary</b> Panchromatic: 5 m, Multispectral: 10 m SWIR: 20 m <i>[Best Resolution: 5m]</i> <b>Swath Summary</b> 60 km (1 instrument), 117 km (2 instruments). Same as SPOT 4 with off-track steering capability ( $\pm 27$ deg) <i>[Max Swath: 117 km]</i> <b>Waveband Summary</b> VIS: B1: 0.50 - 0.59 $\mu$ m, B2: 0.61 - 0.68 $\mu$ m, NIR: B3: 0.78 - 0.89 $\mu$ m, SWIR: 1.58 - 1.75 $\mu$ m, Panchromatic: 0.49 - 0.69 $\mu$ m	Same as above
M6	SPOT 5 HRG(1)	Owner: CNES Distributor: Spotimage	Same as SPOT 4	Mission: On-going  Timeframe :  Launch Date: 04 May 02  Planned EOL Date: N.A.  Instrument : Operational	Same as SPOT 4	<b>Resolution Summary</b> Panchromatic: 5 m, Multispectral: 10 m SWIR: 20 m <i>[Best Resolution: 5m]</i> <b>Swath Summary</b> 60 km (1 instrument), 117 km (2 instruments). Same as SPOT 4 with off-track steering capability ( $\pm 27$ deg) <i>[Max Swath: 117 km]</i> <b>Waveband Summary</b> VIS: B1: 0.50 - 0.59 $\mu$ m, B2: 0.61 - 0.68 $\mu$ m, NIR: B3: 0.78 - 0.89 $\mu$ m, SWIR: 1.58 - 1.75 $\mu$ m, Panchromatic: 0.49 - 0.69 $\mu$ m	High resolution multispectral mapper. 2 lines of detectors in HRG instruments on this mission can be processed to produce imagery of 2.5 m. Images are 60 x 60 km in size
M7	SPOT 5 HRG(2)	Owner: CNES Distributor: Spotimage	Same as SPOT 4	Mission: On-going  Timeframe:  Launch Date: 04 May 2002	Same as SPOT 4	<b>Resolution Summary</b> Panchromatic: 5 m, Multispectral: 10 m <i>[Best Resolution: 5m]</i> <b>Swath Summary</b> 60 km (1 instrument), 117 km (2 instruments). Same as SPOT 4 with off-track steering capability ( $\pm 27$ deg)	High resolution multispectral mapper. 2 lines of detectors in HRG instruments on this mission can be processed to produce imagery of 2.5 m.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Planned EOL Date: N.A. Instrument: Operational		deg) [Max Swath: 117 km] <b>Waveband Summary</b> VIS: B1: 0.50 - 0.59 µm, B2: 0.61 - 0.68 µm, NIR: B3: 0.79 - 0.89 µm, SWIR: 1.50 - 1.75 µm, Panchromatic: 0.49 - 0.69 µm	Images are 60 x 60 km in size
M8	SPOT 5 HRS	Owner: CNES Distributor: Spotimage	Same as SPOT 4	Mission: On-going Timeframe : Launch Date: 04 May 2002 Planned EOL Date: N.A. Status : Operational	High resolution stereoscopic cameras	<b>Resolution Summary</b> <b>10 m on ground,5(-10 m on height</b> <b>Swath Summary:</b> 120 km <b>Stereoscopic images length:</b> 600 Kms max Waveband summary: Panchromatic: 0,49-0,69 µm Along track viewing angle of two cameras : +/- 20 °	3D cartography
M9	ALOS PRISM	Owner: JAXA  Agreement with ESA	Type: Sun-synchronous Altitude: 692 km Period: 98.7 mins Inclination: 98.16 deg Repeat cycle: 46 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.jaxa.jp/projects/sat/alos/index_e.html">http://www.jaxa.jp/projects/sat/alos/index_e.html</a>	Mission: On-going Timeframe: Launch Date: 24 Jan 2006 Planned EOL Date: 01 Sep 2010 Instrument: Operational	High resolution optical imagers	<b>Swath Summary</b> 35 km (triplet stereo observations), 70 km (nadir observations) [Max Swath: 70 km] <b>Waveband Summary</b> VIS - NIR: 0.52 - 0.77 µm (panchromatic)	High resolution panchromatic stereo imager for land applications which include cartography, digital terrain models, civil planning, agriculture and forestry
M10	ALOS AVNIR-2	Owner: JAXA Distributor: Agreement with ESA	Same as above	Mission: On-going Timeframe: Launch Date: 24 Jan 2006 Planned EOL Date: 01 Sep 2010 Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> 10 m [Best Resolution: 10m] <b>Swath Summary</b> 70 km [Max Swath: 70 km] <b>Accuracy Summary</b> Surface Resolution:10 m (Nadir) <b>Waveband Summary</b> VIS: 0.42 - 0.50 µm, 0.52 - 0.60 µm, 0.61 - 0.69 µm, NIR: 0.76 - 0.89 µm	High resolution multi-spectral imager for land applications which include environmental monitoring, agriculture and forestry, disaster monitoring
M11	IKONOS-2	Owner: EUSI (until 2008), GeoEye (since 2009)	Type: Sun-synchronous Altitude: 681 km Period: 98 mins Inclination: 98.1 deg	Mission: On-going Timeframe:	High resolution optical imagers	<b>Resolution Summary</b> Bands 1-4 multispectral: 3.8-4 m, panchromatic: 0.82-1 m	High resolution multi-spectral imager for land applications which include mapping of natural resources and of natural

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
		Distributor: EUSI (until 2008), e-GEOS (since 2009)	Repeat cycle: xxx days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.satimagingcorp.com/satellite-sensors/ikonos.html">http://www.satimagingcorp.com/satellite-sensors/ikonos.html</a>	Launch Date: Sep 1999 Planned EOL Date: N.A. Instrument: operational		<i>[Best Resolution: 0.82 m]</i> <b>Swath Summary</b> 13 km <i>[Max Swath: 13 km]</i> <b>Waveband Summary</b> VIS: Band 1: 0.45 - 0.52 $\mu\text{m}$ , Band 2: 0.51 - 0.60 $\mu\text{m}$ , Band 3: 0.63 - 0.70 $\mu\text{m}$ , NIR: Band 4: 0.76 - 0.85 $\mu\text{m}$ , S	disasters, tax mapping, agriculture and forestry analysis, mining, engineering, construction, and change detection
M12	IRS-1C Linear Imaging Self Scanner - III (IRS)	Owner: ISRO Distributor: EuroMap	Type: Sun-synchronous Altitude: 817 km Period: 101.35 mins Inclination: 98.6 deg Repeat cycle: 24 days LST: 10:50 Longitude (if geo): Asc/desc: Descending URL: Not Available	Mission: Completed Timeframe: Launch Date: 28 Dec 1995 EOL Date: 21 Sep 2007 Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> Bands 2, 3 & 4: 23.5 m, Band 5: 70.5 m <i>[Best Resolution: 23.5m]</i> <b>Swath Summary</b> 141 km <i>[Max Swath: 141 km]</i> <b>Waveband Summary</b> VIS: Band 2: 0.52 - 0.59 $\mu\text{m}$ , Band 3: 0.62 - 0.68 $\mu\text{m}$ , NIR: Band 4: 0.77 - 0.86 $\mu\text{m}$ , SWIR: Band 5: 1.55 - 1.75 $\mu\text{m}$	Data used for vegetation type assessment, resource assessment, crop stress detection, crop production forecasting, forestry, land use and land cover change
M13	IRS-1C Panchromatic sensor	Owner: ISRO Distributor: EuroMap	Same as above	Mission: Completed Timeframe: Launch Date: 28 Dec 1995 EOL Date: 21 Sep 2007 Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> 5.8 m <i>[Best Resolution: 5.8m]</i> <b>Swath Summary</b> 70 km at nadir <i>[Max Swath: 70 km]</i> <b>Waveband Summary</b> Panchromatic VIS: 0.5 - 0.75 $\mu\text{m}$	High resolution stereo images for study of topography, urban areas, development of DTM, run-off models etc. Urban sprawl, forest cover/timber volume, land use change
M14	IRS-1D Linear Imaging Self Scanner - III (IRS)	Owner: ISRO Distributor: EuroMap	Type: Sun-synchronous Altitude: 817 km Period: 101 mins Inclination: 98.6 deg Repeat cycle: 24 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: Not Available	Mission: On-going Timeframe: Launch Date: 29 Sep 1997 Planned EOL Date: 31 Dec 2009 Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> Bands 2, 3 & 4: 23.5 m, Band 5: 70.5 m <i>[Best Resolution: 23.5m]</i> <b>Swath Summary</b> 141 km <i>[Max Swath: 141 km]</i> <b>Waveband Summary</b> VIS: Band 2: 0.52 - 0.59 $\mu\text{m}$ , Band 3: 0.62 - 0.68 $\mu\text{m}$ , NIR: Band 4: 0.77 - 0.86 $\mu\text{m}$ , SWIR: Band 5: 1.55 - 1.75 $\mu\text{m}$	Data used for vegetation type assessment, resource assessment, crop stress detection, crop production forecasting, forestry, land use and land cover change
M15	IRS-1D Panchromatic sensor	Owner: ISRO	Same as above	Mission: On-going Timeframe:	High resolution optical imagers	<b>Resolution Summary</b> 5.8 m <i>[Best Resolution: 5.8m]</i> <b>Swath Summary</b> 70 km at nadir	High resolution stereo images for study of topography, urban areas, development of DTM,

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
		Distributor: EuroMap		Launch Date: 29 Sep 1997 Planned EOL Date: 31 Dec 2009 Instrument: Operational		[Max Swath: 70 km] <b>Waveband Summary</b> Panchromatic VIS: 0.5 - 0.75 µm	run-off models etc. Urban sprawl, forest cover/timber volume, land use change
M16	IRS CartoSAT-1	Owner: ISRO Distributor: EuroMap	Type: Sun-synchronous Altitude: 618 km Period: 97 mins Inclination: 97.87 deg Repeat cycle: 5 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.isro.org/">http://www.isro.org/</a>	Mission: On-going Timeframe: Launch Date: 05 May 2005 Planned EOL Date: 31 Dec 2009 Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> 2.5 m [Best Resolution: 2.5m] <b>Swath Summary</b> 30 km [Max Swath: 30 km] <b>Waveband Summary</b> Panchromatic VIS: 0.5 - 0.75 µm	High resolution stereo images for study of topography, urban areas, development of DTM, run-off models etc. Urban sprawl, forest cover/timber volume, land use change
M17	IRS-P6 (Resourcesat-1) Linear Imaging Self Scanner (LISS) 3).	Owner: ISRO Distributor: EuroMap	Orbit Circular Polar Sun Synchronous Orbit height 817 km Orbit inclination 98.7 deg Orbit period 101.35 min Number of Orbits Per day 14 Local time of equator crossing 10:30 am Repetivity (LISS-3) 24 days Revisit 5 days Lift-Off mass 1360 kg Attitude and orbit control 3-axis body stabilised using Reaction Wheels, Magnetic Torquers and Hydrazine Thrusters. <a href="http://www.isro.org/satellites/irs-p6resourcesat-1.aspx">http://www.isro.org/satellites/irs-p6resourcesat-1.aspx</a>	Mission On-going Timeframe: Launch Date: 17 Oct 2003 Planned EOL Date: N.A. Instrument: Operational	Imaging Sensors	Swath: 70/23.9 Km Bands: PAN, VNIR(3) Res: 5.8 m This satellite carries three different imaging sensors <b>LISS 3</b> Band Wavelength Region (µm) Resolution (m) 1 0.52 - 0.59 (green) 24 2 0.62 - 0.68 (red) 24 3 0.77 - 0.86 (near-IR) 24 4 1.55 - 1.70 (mid-IR) 24	Linear Imaging Self Scanner (LISS) 3 and 4 and an advanced Wide Field Scanner (AWiFS). The LISS 3 instrument is multispectral in the visible to mid-infrared region with a spatial resolution of 24m and swath width of 140km.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
M18	IRS-P6 (Resourcesat-1) Linear Imaging Self Scanner (LISS) 4	Owner: ISRO Distributor: EuroMap	Same as above	Mission On-going Timeframe: Launch Date: 17 Oct 2003 Planned EOL Date: N.A. Instrument: Operational	Same as above	<b>LISS4</b>  Band    Wavelength Region (µm) Resolution (m) 1        0.52 - 0.59 (green)    6 2        0.62 - 0.68 (red)     6 3        0.77 - 0.86 (near-IR) 6 4        1.55 - 1.70 (mid-IR) 6 pan      0.62-0.68 (red)        6	The LISS 4 instrument has two modes that both operate at a spatial resolution of 6m. The multispectral (visible to near-infrared) instrument has a swath width of 24km and 70km for the panchromatic (monochrome) mode.
M19	IRS-P6 (Resourcesat-1) Wide Field Scanner (AWiFS).	Owner: ISRO Distributor: EuroMap	Same as above	Mission On-going Timeframe: Launch Date: 17 Oct 2003 Planned EOL Date: N.A. Instrument: Operational	Same as above	  Band    Wavelength Region (µm) Resolution (m) 1        0.052-0.59 (green)    60 2        0.62-0.68 (red)        60 3        0.77-0.86 (near-IR)    60 4        1.55-1.70 (mid-IR)    60	The AWiFS has a spatial resolution of 60m and a 740km swath width. Both LISSs have 7-bit radiometric resolution, while the AWiFS has 10-bit.
M20	IRS Resourcesat-2	Owner: ISRO Distributor: EuroMap	Regime Polar Sun-Synchronous Circular orbit Inclination 98.72 Orbital period 102 minutes Apoapsis 817 kilometres (508 mi) Periapsis 817 kilometres (508 mi)	Mission: Future Timeframe: Planned Launch Date: End 2010 Planned EOL Date: N.A. Instrument: Not Operational	Imaging Sensors	Swath: 70/23.9 Km Bands: PAN, VNIR(3) Res: 5.8 m  Resourcesat-2 is its follow-on Mission scheduled for launch in 2008. Each Resourcesat satellite carries three Electro-optical cameras as its payload - LISS-3, LISS-4 and AWiFS. All the three are multi-spectral push-broom scanners with linear array CCDs as Detectors. LISS-3 and AWiFS operate in four identical spectral bands in the VIS-NIR-SWIR range while LISS-4 is a high resolution camera with three spectral bands in VIS-NIR range.	The Resourcesat data finds its application in several areas like agricultural crop discrimination and monitoring, crop acreage/yield estimation, precision farming, water resources, forest mapping, Rural infrastructure development, disaster management etc., to name a few.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
						Compared to Resourcesat-1, LISS-4 multi-spectral swath has been enhanced from 23 km to 70 km based on user needs. Suitable changes including miniaturization in payload electronics have been incorporated in Resourcesat-2.	
M21	DMC-UK-1 Surrey Linear Imager - 6 channel	Owner: DMC Imaging  Agreement with ESA	Type: Sun-synchronous Altitude: 686 km Period: 98.4 mins Inclination: 98.2 deg Repeat cycle: 5 days LST: 10:15 Longitude (if geo): Asc/desc: Ascending URL: Not available	Mission: On-going Timeframe: Launch Date: 27 Sep 2003 Planned EOL Dates: N.A. Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> 32 m [Best Resolution: 32m] <b>Swath Summary</b> Two imaging banks each with a 340km swath. The two swaths overlap by 16km, providing a total swath up to 648km [Max Swath: 648 km] <b>Accuracy Summary</b> S/N 100:1 @ target albedo of 0.1. <b>Waveband Summary</b> VIS: 0.63-0.69 µm, 0.52-0.60 µm; NIR: 0.77-0.90 µm.	Visible and NIR imagery in support of disaster management - part of the Disaster Management constellation
M22	DMCii-UK-2 Surrey Linear Imager - 6 channel - 22m resolution	Owner: DMC Imaging	Type: Sun-synchronous Altitude: 686 km Period: 98.5 mins Inclination: 98.14 deg Repeat cycle: 5 days LST: 10:30 Longitude (if geo): Asc/desc: Ascending URL: Not Available	Mission: On-going Timeframe: Launch Date: 29 Jul 2009 Planned EOL Dates: Jul 2014 Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> 22 m [Best Resolution: 22m] <b>Swath Summary</b> Two imaging banks each with a 330km swath. The two swaths overlap by 11km, providing a total swath up to 638km [Max Swath: 638 km] <b>Accuracy Summary</b> S/N 150:1 @ target albedo of 0.1. <b>Waveband Summary</b> VIS: 0.63-0.69 µm, 0.52-0.61 µm; NIR: 0.77-0.90 µm.	Visible and NIR imagery in support of disaster management - part of the Disaster Management constellation
M23	Proba-1 CHRIS	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 615 km Period: 96.97 mins Inclination: 97.9 deg Repeat cycle: 7 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: Not Available	Mission: On-going : Launch Date: 22 Oct 2001 Planned EOL Dates: N.A. Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 36 m or 18 m depending on wavebands selected. [Best Resolution: 18m] <b>Swath Summary</b> 14 km [Max Swath: 14 km] <b>Accuracy Summary</b> S/N 200 @ target albedo of 0.2. 12 bits digitisation. <b>Waveband Summary</b> VIS - NIR: 400 - 1050 nm (63 spectral bands at a spatial resolution of 36 m; or 18 bands at full	Supports a range of land, ocean and atmospheric applications, including agricultural science, forestry, environmental science, atmospheric science and oceanography

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
						spatial resolution (18 m))	
M24	Proba-1 HRC	Owner & Distributor ESA	Same as above	Mission: On-going : Launch Date: 22 Oct 2001 Planned EOL Dates: N.A. Instrument: Operational	High Resolution Camera	Swath: 25 Km Bands: PAN Res: 5 m	Same as above
M25	LANDSAT 1 Multispectral Scanner	Owner: NASA  Agreement with ESA	Type: Sun-synchronous Altitude: 900 km Period: 103 mins Inclination: 99.2 deg Repeat cycle: 18 days LST: 9:42 Asc/desc: Descending URL: <a href="http://landsat.gsfc.nasa.gov/about/L1_td.html">http://landsat.gsfc.nasa.gov/about/L1_td.html</a>	Mission: Completed  Launch Date: 23 Jul 1972  EOL Date: 6 Jan 1978  Instrument: Not operational	High resolution optical imagers	<b>Resolution Summary</b> 68 x 83 m <i>[Best Resolution: 68 m]</i> <b>Swath Summary</b> 185 km <i>[Max Swath: 185 km]</i> <b>Waveband Summary</b> VIS - TIR: 5 bands: 0.5 - 12.6 µm	The first five Landsats carried the MSS sensor which responded to Earth-reflected sunlight in four spectral bands. Landsat 3 carried an MSS sensor with an additional band, designated band 8, that responded to thermal (heat) infrared radiation.
M26	LANDSAT 2 Multispectral Scanner	Owner: NASA  Agreement with ESA	Altitude: nominally 900 km Inclination: 99.2° Orbit: polar, sun-synchronous Equatorial Crossing Time: nominally 9:42 AM mean local time (descending node) Period of Revolution : 103 minutes; ~14 orbits/day Repeat Coverage : 18 days  URL: <a href="http://landsat.gsfc.nasa.gov/about/L2_td.html">http://landsat.gsfc.nasa.gov/about/L2_td.html</a>	Mission: Completed  Launch Date: 22 Jan 1975  EOL Date: 5 Feb 1982  Instrument: Not Operational	Multispectral Scanner System	<ul style="list-style-type: none"> <li>• Sensor type: opto-mechanical</li> <li>• Spatial Resolution: 68 m X 83 m (commonly resampled to 57 m)</li> <li>• Spectral Range: 0.5 - 1.1 µm</li> <li>• Number of Bands: 4, 5 (Landsat 3 only)</li> <li>• Temporal Resolution: 18 days (L1-L3)</li> <li>• Image Size: 185 km X 185 km</li> <li>• Swath: 185 km</li> <li>• Programmable: no</li> </ul>	The first five Landsats carried the MSS sensor which responded to Earth-reflected sunlight in four spectral bands. Landsat 3 carried an MSS sensor with an additional band, designated band 8, that responded to thermal (heat) infrared radiation.
M27	LANDSAT 3 Multispectral Scanner	Owner: NASA  Agreement with ESA	Altitude: nominally 900 km Inclination: 99.2° Orbit: polar, sun-synchronous Equatorial Crossing Time: nominally 9:42 AM mean local time (descending node) Period of Revolution : 103 minutes; ~14 orbits/day Repeat Coverage : 18 days  URL:	Mission: Completed  Launch Date: 5 March 1978  EOL Dates: 31 March 1983  Instrument: Not Operational	Multispectral Scanner System	<ul style="list-style-type: none"> <li>• Sensor type: opto-mechanical</li> <li>• Spatial Resolution: 68 m X 83 m (commonly resampled to 57 m)</li> <li>• Spectral Range: 0.5 - 1.1 µm</li> <li>• Number of Bands: 4, 5 (Landsat 3 only)</li> <li>• Temporal Resolution: 18 days (L1-L3)</li> <li>• Image Size: 185 km X 185 km</li> <li>• Swath: 185 km</li> </ul>	The first five Landsats carried the MSS sensor which responded to Earth-reflected sunlight in four spectral bands. Landsat 3 carried an MSS sensor with an additional band, designated band 8, that responded to thermal (heat) infrared radiation.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			<a href="http://landsat.gsfc.nasa.gov/about/L3_td.html">http://landsat.gsfc.nasa.gov/about/L3_td.html</a>			<ul style="list-style-type: none"> <li>Programmable: no</li> </ul>	
M28	LANDSAT 4 Multispectral Scanner	Owner: NASA  Agreement with ESA	Type: Sun-synchronous Altitude: 705 km Period: 98.9 mins Inclination: 98.2 deg Repeat cycle: 16 days URL: <a href="http://landsat.usgs.gov/">http://landsat.usgs.gov/</a>	Mission: Completed Timeframe: Launch Date: 16 Jul 1982 EOL Dates: 01 Aug 1993 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> VIS-NIR: 80 m <i>[Best Resolution: 80m]</i> <b>Swath Summary</b> 185 km <i>[Max Swath: 185 km]</i> <b>Waveband Summary</b> VIS - NIR: 4 bands: 0.5 - 1.1 µm <b>Temporal Resolution:</b> 16 days (L4 & L5)	Imaging multi-spectral radiometers (vis/IR)
M29	LANDSAT 4 Thematic Mapper	Owner: NASA  Agreement with ESA	Same as above	Mission: Completed Timeframe: Launch Date: 16 Jul 1982 EOL Dates: 01 Aug 1993 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> VIS - SWIR, 30 m; TIR: 120 m <i>[Best Resolution: 30m]</i> <b>Swath Summary</b> 185 km <i>[Max Swath: 185 km]</i> <b>Waveband Summary</b> VIS - TIR: 7 bands: 0.45 - 12.5 µm <b>Temporal Resolution:</b> 16 days (L4 & L5)	Measures surface radiance and emittance, lands cover state and change (eg vegetation type). Used as multipurpose imagery for land applications
M30	LANDSAT 5 Multispectral Scanner	Owner: NASA  Agreement with ESA	Type: Sun-synchronous Altitude: 705 km Period: 98.9 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: <a href="http://landsat.usgs.gov/">http://landsat.usgs.gov/</a>	Mission: On-going Timeframe: Launch Date: 01 Mar 1984 Planned EOL Dates: 31 Dec 2012 Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> VIS-NIR: 80 m <i>[Best Resolution: 80m]</i> <b>Swath Summary</b> 185 km <i>[Max Swath: 185 km]</i> <b>Waveband Summary</b> VIS - NIR: 4 bands: 0.5 - 1.1 µm <b>Temporal Resolution:</b> 16 days (L4 & L5)	Imaging multi-spectral radiometers (vis/IR)
M31	LANDSAT 5 Thematic Mapper	Owner: NASA  Agreement with ESA	Same as above	Mission: On-going Timeframe: Launch Date: 01 Mar 1984 Planned EOL Dates: 31 Dec 2012 Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> VIS - SWIR, 30 m; TIR: 120 m <i>[Best Resolution: 30m]</i> <b>Swath Summary</b> 185 km <i>[Max Swath: 185 km]</i> <b>Waveband Summary</b> VIS - TIR: 7 bands: 0.45 - 12.5 µm <b>Temporal Resolution:</b> 16 days (L4 & L5)	Measures surface radiance and emittance, lands cover state and change (eg vegetation type). Used as multipurpose imagery for land applications

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
						L5)	
M32	LANDSAT 7 Enhanced Thematic Mapper Plus	Owner: NASA  Agreement with DLR, ESA	Type: Sun-synchronous Altitude: 705 km Period: 98.9 mins Inclination: 98.2 deg Repeat cycle: 16 days LST: 10:05 Longitude (if geo): Asc/desc: Descending URL: <a href="http://landsat.usgs.gov">http://landsat.usgs.gov</a>	Mission: On-going  Timeframe:  Launch Date: 15 Apr 1999  Planned EOL Dates: 31 Dec 2012  Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> PAN: 15 m, VIS - SWIR: 30 m, TIR: 60 m <i>[Best Resolution: 15m]</i> <b>Swath Summary</b> 185 km <i>[Max Swath: 185 km]</i> <b>Accuracy Summary</b> 50 - 250 m systematically corrected geodetic accuracy <b>Waveband Summary</b> VIS - TIR: 8 bands: 0.45 - 12.5 µm	Measures surface radiance and emittance, land cover state and change (eg vegetation type). Used as multi-purpose imagery for land applications
M33	KOMPSAT-2	Owner: KARI  Agreement with ESA	Type: Sun-synchronous Altitude: 685 km Period: 98.5 mins Inclination: Repeat cycle: 28 days LST: 10:50 Longitude (if geo): Asc/desc: Ascending URL: Not Available	Mission: On-going  Timeframe:  Launch Date: 27 Jul 2006  Planned EOL Dates: 27 Jul 2011  Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> Pan: 1 m; VNIR: 4 m <i>[Best Resolution: 1m]</i> <b>Swath Summary</b> 15 km <i>[Max Swath: 15 km]</i> <b>Waveband Summary</b> Panchromatic VIS: 0.50 - 0.90 µm, VIS: 0.45 - 0.52 µm, 0.52 - 0.60 µm, 0.63 - 0.69 µm, NIR: 0.76 - 0.90 µm	High resolution imager for land applications of cartography and disaster monitoring
M34	TOPSAT TOPSAT Telescope	Owner: QinetiQ	Type: Sun-synchronous Altitude: 600 km Period: Inclination: 98 deg Repeat cycle: LST: 10:30 Longitude (if geo): Asc/desc: Ascending URL: <a href="#">click here</a>	Mission: Completed  Timeframe:  Launch Date: 27 Oct 2005  EOL Dates: August 2009  Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> Multi-spectral imagery (RGB). resolution 5.6 m <i>[Best Resolution: 5.6m]</i> <b>Swath Summary</b> Panchromatic imagery 17 x 17 km; Multi Spectral - Swath 12 x 18 km <i>[Max Swath: 17 km]</i> <b>Waveband Summary</b> Panchromatic imagery. Resolution 2.8 m	Experimental medium-resolution imaging satellite supporting a range of possible land applications.
M35	DMC Deimos-1	Owner: Deimos	Orbit Height: 686 km Orbit Type: Sun-synchronous near-circular	Mission: On-going  Timeframe:	High resolution optical imagers	Swath: 660 Km Bands: 3 (Green, red, NIR)	The satellite will provide imagery for commercial applications, for government

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
		Imaging	Constellation revisit time: daily coverage at a resolution that enables effective monitoring of the rapidly changing environment  URL: <a href="http://envisat.esa.int/object/index.cfm?fobjectid=5147">http://envisat.esa.int/object/index.cfm?fobjectid=5147</a>	Launch Date Jul 2009  Planned EOL Date: N.A.  Instrument: Operational		Res: 22 m  <b>Swath Width:</b> 600km+ <b>Resolution:</b> 22 m for MS (Multispectral bands)	use and for rapid-response following disasters.
M36	VENUS  Venus Superspectral Camera	Owner & Distributor  CNES	Type: Sun-synchronous Altitude: 720 km Period: Inclination: 98.27 deg Repeat cycle: 2 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://smc.cnes.fr/VENUS/index.htm">http://smc.cnes.fr/VENUS/index.htm</a>	Mission: Future  Timeframe: Launch Date: March 2012  Planned EOL Date: N.A.  Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 5.3 m spatial resolution with 27 km swath <i>[Best Resolution: 5.3m]</i> <b>Swath Summary</b> 27 km <i>[Max Swath: 27 km]</i> <b>Waveband Summary</b> 420 nm centre wavelength (width: 40 nm); 443 nm (40); 490 nm (40); 555 nm (40); 620 nm (40); 620 nm (40); 667 nm (30); 702 nm (24); 742 nm (16); 782 nm (16); 865 nm (40); 910 nm (20)	High resolution superspectral images (12 spectral bands) for vegetation and landcover applications

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
M37	GeoEye-1 (Orbview-5)	Owner: GeoEye  Distributor: e-GEOS	Orbital Altitude 681 kilometers / 423 miles Orbital Velocity About 7.5 km/sec or 17,000 mi/hr Inclination/Equator Crossing Time 98 degrees / 10:30am Orbit type/period Sun-synchronous / 98 minutes GeoEye-1 makes 15 orbits per day. Its sun-synchronous orbit allows it to pass over a given area at about 10:30 a.m. local time every day. GeoEye-1 can "revisit" any point on the globe every three days or sooner, depending upon the required look angle. URL: <a href="http://launch.geoeye.com/LaunchSite/Default.aspx">http://launch.geoeye.com/LaunchSite/Default.aspx</a>	Mission: On-going  Launch Date : 6 September 2008  Planned EOL Date: Operational Life Fully redundant 7+ year design life; fuel for 15 years  Instrument: Operational	Optical telescope, detectors, focal plane assemblies and high-speed digital processing electronics are capable of processing 700 million pixels per second.	<b>Camera Modes</b> Simultaneous panchromatic and multispectral (pan-sharpened) Panchromatic only Multispectral only <b>Resolution</b> 0.41 m / 1.34 ft* panchromatic (nominal at Nadir), 1.65 m / 5.41 ft* multispectral (nominal at Nadir) <b>Metric Accuracy/Geolocation CE</b> stereo: 2 m / 6.6 ft, LE stereo : 3 m / 9.84 ft, CE mono: 2.5 m / 8.20 ft. These are specified as 90% CE (circular error) for the horizontal and 90% LE (linear error) for the vertical with no ground control <b>Swath Widths &amp; Representative Area Sizes</b> Nominal swath width - 15.2 km / 9.44 mi at Nadir. Single-point scene - 225 sq km (15x15 km), Contiguous large area - 15,000 sq km (300x50 km), Contiguous 1° cell size areas - 10,000 sq km (100x100 km), Contiguous stereo area - 6,270 sq km (224x28 km), (Area assumes pan mode at highest line rate) <b>Imaging Angle</b> Capable of imaging in any direction	GeoEye-1 customers have a choice of ordering basic, orthorectified or stereo imagery as well as imagery-derived products, including Digital Elevation Models (DEM's) and Digital Surface Models (DSM's), large area mosaics and feature maps. GeoEye-1 products will serve a wide variety of applications.
M38	Prisma	Owner & Distributor ASI	Repeat Cycle 29days  Orbit Altitude 680 km Inclination 97.87 Local Time descending node 10.30  URL: <a href="http://www.asi.it/en/activity/earth_observation/prisma">http://www.asi.it/en/activity/earth_observation/prisma</a>	Mission: Future Timeframe: Planned Launch Date: 2011 Planned EOL Date: 2016  Instrument : Not Operational	High resolution optical imagers	Hyperspectral/Panchromatic sensor  Spatial Resolution: 20-30 m (Hyp), 2.5-5m (PAN)  Swath Width: 30-60 km  Spectral Range: 0.4-2.5 mm (Hyp), 0.4-0.7 mm (PAN)	Applications domain: - Mapping of land cover and agricultural landscapes - Pollution monitoring - Quality of inland waters - Coastal zones and Mediterranean Sea - Soil moisture - Carbon cycle monitoring
M39	Sentinel-2A and 2B	Owner & Distributor ESA	Sentinel-2 polar-orbiting satellites will provide systematic global acquisitions of high-resolution multispectral imagery with a high revisit frequency.	Mission: Future Timeframe: Planned Launch Date: 2012 (S-2a) and 2014 (S-2b)	High resolution optical imagers	13 spectral bands (VNIR & SWIR) Spatial resolution: 10, 20 and 60 m Swath: 290 km	Data from Sentinel-2 will benefit services in areas such as land management by European and national public institutes, the agricultural industry and forestry as well as disaster

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			URL: <a href="http://www.esa.int/esaLP/SEMM4T4KXMF_LPgmes_0.html">http://www.esa.int/esaLP/SEMM4T4KXMF_LPgmes_0.html</a>	Planned EOL Date: N.A. Instrument : Not Operational			control and humanitarian relief operations. Images of extreme events such as floods, volcanic eruptions and landslides will also be acquired by Sentinel-2.
M40	RapidEye Multi Spectral Imager	Owner: RapidEye  Agreement with DLR	Type: Sun-synchronous Altitude: 622 km Period: Inclination: 98.7 deg Repeat cycle: 1 days LST: 11:00 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.rapideye.de/">http://www.rapideye.de/</a>	Mission: On-going Timeframe: Launch Date: 29 Aug 2008 Planned EOL Date: 30 Aug 2015 Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> 6.5 m <i>[Best Resolution: 6.5m]</i> <b>Swath Summary</b> 78 km <i>[Max Swath: 78 km]</i> <b>Accuracy Summary</b> 2-3% <b>Waveband Summary</b> 4 VIS + 1 NIR band: 440 - 510 nm, 520 - 590 nm, 630 - 685 nm, 690 - 730 nm, 760 - 850 nm	High resolution images with short observing cycle for commercial and scientific applications
M41	EnMAP Hyperspectral Imager	Owner & Distributor DLR	Type: Sun-synchronous Altitude: 650 km Period: 97.5 mins Inclination: Repeat cycle: 21 days LST: 11:00 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.enmap.org/">http://www.enmap.org/</a>	Mission: Future Timeframe: Planned Launch Date: 2012 Planned EOL Date: N.A. Instrument: Not Operational	Hyperspectral Imager	<b>Resolution Summary</b> GSD 30 m <i>[Best Resolution: 30m]</i> <b>Swath Summary</b> 30 km <i>[Max Swath: 30 km]</i> <b>Accuracy Summary</b> Radiometric: <5% <b>Waveband Summary</b> 420 - 2450 nm	Detailed monitoring and characterization of rock and soil targets, vegetation, inland and coastal waters on a global scale
M42	Pleiades 1 High-Resolution Imager	Owner : CNES	Type: Sun-synchronous Altitude: 694 km Period: Inclination: Repeat cycle: 26 days LST: 10:15 Longitude (if geo): Asc/desc: Descending URL: <a href="http://smc.cnes.fr/PLEIADES/Fr/index.htm">http://smc.cnes.fr/PLEIADES/Fr/index.htm</a>	Mission: Future Timeframe: Planned Launch Date: 1 <sup>st</sup> quarter 2011 Planned EOL Date: N.A. Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> PAN: 0.70m, XS: 2,8 m <i>[Best Resolution: 0.7m]</i> <b>Swath Summary</b> 20 km swath at nadir. Agile platform giving ±50 deg off-track <i>[Max Swath: 20 km]</i> <b>Waveband Summary</b> 4 bands + PAN: Near IR (0.77 - 0.91 µm), Red (0.61 - 0.71 µm), Green (0.50 - 0.60 µm), Blue (0.44 - 0.54 µm), Pan (0.47 - 0.84 µm)	Cartography, land use, risk, agriculture and forestry, civil planning and mapping, digital terrain models, defence
M43	Pleiades 2 High-Resolution Imager	Owner CNES	Type: Sun-synchronous Altitude: 694 km Period: Inclination: Repeat cycle: LST: 10:15	Mission: Future Timeframe: Planned Launch Date: 01 Dec 2011	High resolution optical imagers	<b>Resolution Summary</b> PAN: 0.70m, XS: 2,8 m <i>[Best Resolution: 0.7m]</i> <b>Swath Summary</b> 20 km swath at nadir. Agile platform giving ±50 deg off-track <i>[Max Swath: 20 km]</i>	Cartography, land use, risk, agriculture and forestry, civil planning and mapping, digital terrain models, defence

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			Longitude (if geo): Asc/desc: Descending URL: <a href="http://smc.cnes.fr/PLEIADE/S/Fr/index.htm">http://smc.cnes.fr/PLEIADE/S/Fr/index.htm</a>	Planned EOL Date: N.A.  Instrument: Not Operational		<b>Waveband Summary</b> 4 bands + PAN: Near IR (0.77 - 0.91 $\mu\text{m}$ ), Red (0.61 - 0.71 $\mu\text{m}$ ), Green (0.50 - 0.60 $\mu\text{m}$ ), Blue (0.44 - 0.54 $\mu\text{m}$ ), Pan (0.47 - 0.84 $\mu\text{m}$ )	
M44	SEOSAT	Owner: CDTI	Sun-synchronous orbit Altitude of ~670 km LTDN (Local Time of Descending Node) at 10:30 hour 49-day repeat cycle, 3 days accessibility  URL: <a href="http://events.eoportal.org/get_announce.php?an_id=10002318">http://events.eoportal.org/get_announce.php?an_id=10002318</a>	Mission : Future Planned Launch Date: Q4 2012 Planned EOL Date: N.A. Instrument: Not Operational	High resolution optical imagers	- Panchromatic band - 4 MS (Multispectral) bands  Pan B, G, R and NIR  - Swath > 55 km - GSD (Ground Sample Distance) $\leq$ 2.5 m (Pan), $\leq$ 10 m (MS)  Equivalent FOV= 5.13°	The overall mission objective is to provide information for applications in cartography, land use, urban management, water management, environmental monitoring, risk management and security
M45	CBERS-3 IRS	Owner: CNSA / INPE Agreement with ASI	Type: Sun-synchronous Altitude: 778 km Period: 100.26 mins Inclination: 98.5 deg Repeat cycle: 26 days LST: 11:50 Longitude (if geo): Asc/desc: Descending URL: Not available	Mission: Future Timeframe: Planned Launch Date: June 2011 Planned EOL Date: June 2014 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible, NIR, SWIR: 78 m, TIR: 156 m <i>[Best Resolution: 78m]</i> <b>Swath Summary</b> 120 km <i>[Max Swath: 120 km]</i> <b>Waveband Summary</b> VIS - NIR: 0.5 - 1.1 $\mu\text{m}$ ; NIR - SWIR: 1.55 - 1.75 $\mu\text{m}$ , 2.08 - 2.35 $\mu\text{m}$ ; TIR: 10.4 - 12.5 $\mu\text{m}$	Used for fire detection, fire extent and temperature measurement
M46	CBERS-3 Multispectral CCD Camera	Owner: CNSA / INPE Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: October 2011 Planned EOL Date: October 2014 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 20 m <i>[Best Resolution: 20m]</i>	Earth resources, environmental monitoring, land use
M47	CBERS-3 Panchromatic and multispectral	Owner: CNSA / INPE	Same as above	Mission: Future	High resolution optical imagers	<b>Resolution Summary</b> 5 m panchromatic and 10 m multispectral <i>[Best Resolution: 5m]</i>	Measurements of cloud type and extent and land surface reflectance, and used for global

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	imager	Agreement with ASI		Timeframe: Planned Launch Date: October 2011 Planned EOL Date: October 2014 Instrument: Not Operational		<b>Swath Summary</b> 60 km [Max Swath: 60 km] <b>Waveband Summary</b> VIS: 0.52 - 0.59 µm, 0.63 - 0.69 µm, NIR: 0.77 - 0.89 µm, PAN: 0.51 - 0.85 µm	land surface applications
M48	CBERS-3 Wide Field Imager 2	Owner: CNSA / INPE Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: October 2011 Planned EOL Date: October 2014 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 73 m [Best Resolution: 73m] <b>Waveband Summary</b> VIS: 0.45 - 0.52 µm, 0.52 - 0.59 µm, 0.63 - 0.69 µm; NIR: 0.77 - 0.89 µm	Earth resources, environmental monitoring, land use
M49	CBERS-4 IRS	Owner: CNSA / INPE Agreement with ASI	Type: Sun-synchronous Altitude: 778 km Period: 100.26 mins Inclination: 98.5 deg Repeat cycle: 26 days LST: 12:50 Longitude (if geo): Asc/desc: Descending URL: Not available	Mission: Future Timeframe: Planned Launch Date: 20 Oct 2014 Planned EOL Date: 20 Oct 2017 Instrument: Not Operational	CBERS-3 IRS	<b>Resolution Summary</b> Visible, NIR, SWIR: 78 m, TIR: 156 m [Best Resolution: 78m] <b>Swath Summary</b> 120 km [Max Swath: 120 km] <b>Waveband Summary</b> VIS - NIR: 0.5 - 1.1 µm; NIR - SWIR: 1.55 - 1.75 µm, 2.08 - 2.35 µm; TIR: 10.4 - 12.5 µm	Used for fire detection, fire extent and temperature measurement
M50	CBERS-4 Multispectral CCD Camera	Owner: CNSA / INPE Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: 20 Oct 2014 Planned EOL Date: 20 Oct 2017 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 20 m [Best Resolution: 20m]	Earth resources, environmental monitoring, land use
M51	CBERS-4 Panchromatic and	Owner:	Same as above	Mission: Future	High resolution	<b>Resolution Summary</b> 5 m panchromatic and 10 m multispectral	Measurements of cloud type and extent and land surface

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	multispectral imager	CNSA / INPE Agreement with ASI		Timeframe: Planned Launch Date: 20 Oct 2014 Planned EOL Date: 20 Oct 2017 Instrument: Not Operational	optical imagers	[Best Resolution: 5m] <b>Swath Summary</b> 60 km [Max Swath: 60 km] <b>Waveband Summary</b> VIS: 0.52 - 0.59 $\mu\text{m}$ , 0.63 - 0.69 $\mu\text{m}$ , NIR: 0.77 - 0.89 $\mu\text{m}$ , PAN: 0.51 - 0.85 $\mu\text{m}$	reflectance, and used for global land surface applications
M52	CBERS-4 Wide Field Imager 2	Owner: CNSA / INPE Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: 20 Oct 2014 Planned EOL Date: 20 Oct 2017 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 73 m [Best Resolution: 73m] <b>Waveband Summary</b> VIS: 0.45 - 0.52 $\mu\text{m}$ , 0.52 - 0.59 $\mu\text{m}$ , 0.63 - 0.69 $\mu\text{m}$ ; NIR: 0.77 - 0.89 $\mu\text{m}$	Earth resources, environmental monitoring, land use
M53	MOS-1 Multispectral Electronic Self-Scanning Radiometer	Owner: NASDA/JAXA Agreement with ESA	Type: Sun-synchronous Altitude: 909 km Period: 103 mins Inclination: 99 deg Repeat cycle: 17 days LST: 10:30 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.jaxa.jp/projects/sat/mos1/index_e.html">http://www.jaxa.jp/projects/sat/mos1/index_e.html</a>	Mission Completed Timeframe: Launch Date: 19 Feb 1987 EOL Date: 29 Nov 1995 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 50m Swath <b>Summary</b> 100km (185km for observing by two cameras) <b>Waveband Summary</b> VIS: 0.51-0.59 $\mu\text{m}$ , 0.61-0.69 $\mu\text{m}$ , 0.72-0.80 $\mu\text{m}$ , NIR: 0.80-1.10 $\mu\text{m}$	Medium resolution visible and thermal infrared imaging of ocean and atmosphere
M54	MOS-1 Microwave Scanning Radiometer	Owner: NASDA/JAXA Agreement with ESA	Same as above	Mission Completed Timeframe: Launch Date: 19 Feb 1987 EOL Date: 29 Nov 1995 Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 32km (23.8GHz), 23km (31.4GHz) <b>Swath Summary</b> 370km <b>Waveband Summary</b> Microwave: 23.8GHz, 31.4GHz	Passive microwave radiometer to measure ocean and atmosphere
M55	MOS – 1 Visible and Thermal Infrared Radiometer	Owner: NASDA/JAXA Agreement with	Same as above	Mission Completed Timeframe:	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> VIS: 900m, TIR: 2700m <b>Swath Summary</b> 1500km <b>Waveband Summary</b> VIS: 0.5-0.7 $\mu\text{m}$ ,	Medium resolution visible and thermal infrared imaging of ocean and atmosphere

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
		ESA		Launch Date: 19 Feb 1987 EOL Date: 29 Nov 1995 Instrument: Not Operational		TIR: 6.0-7.0µm, 10.5-11.5µm, 11.5-12.5µm	
M56	MOS-1b Multispectral Electronic Self-Scanning Radiometer	Owner: NASDA/JAXA Agreement with ESA	Type: Sun-synchronous Altitude: 909 km Period: 103 mins Inclination: 99 deg Repeat cycle: 17 days LST: 10:30 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.jaxa.jp/projects/sat/mos1/index_e.html">http://www.jaxa.jp/projects/sat/mos1/index_e.html</a>	Mission Completed Timeframe: Launch Date: 07 Feb 1990 EOL Date: 17 Apr 1996 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 50m <b>Swath Summary</b> 100km (185km for observing by two cameras) <b>Waveband Summary</b> VIS: 0.51-0.59µm, 0.61-0.69µm, 0.72-0.80µm, NIR: 0.80-1.10µm	Medium resolution visible and thermal infrared imaging of ocean and atmosphere
M57	MOS- 1b Microwave Scanning Radiometer	Owner: NASDA/JAXA Agreement with ESA	Same as above	Mission Completed Timeframe: Launch Date: 07 Feb 1990 EOL Date: 17 Apr 1996 Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 32km (23.8GHz), 23km (31.4GHz) <b>Swath Summary</b> 370km <b>Waveband Summary</b> Microwave: 23.8GHz, 31.4GHz	Passive microwave radiometer to measure ocean and atmosphere
M58	MOS-1b Visible and Thermal Infrared Radiometer	Owner: NASDA/JAXA Agreement with ESA	Same as above	Mission Completed Timeframe: Launch Date: 07 Feb 1990 EOL Date: 17 Apr 1996 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 50m <b>Swath Summary</b> 100km (185km for observing by two cameras) <b>Waveband Summary</b> VIS: 0.51-0.59µm, 0.61-0.69µm, 0.72-0.80µm, NIR: 0.80-1.10µm	Medium resolution visible and thermal infrared imaging of ocean and atmosphere
M59	JERS-1 OPS	Owner: NASDA/JAXA Agreement with ESA	Type: Sun-synchronous Altitude: 570 km Period: 96 mins Inclination: 98 deg Repeat cycle: 44 days LST: 10:45 Longitude (if geo): Asc/desc: Descending URL:	Mission: Completed Timeframe: Launch Date: 11 Feb 1992 EOL Date: 12 Oct 1998 Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> "18.3m (range) × 24.2m (azimuth) <b>Swath Summary</b> 75 km <b>Waveband Summary</b> VIS: 0.42 - 0.50 µm, 0.52 - 0.60 µm, 0.61 - 0.69 µm, NIR: 0.76 - 0.89 µm	High resolution multi-spectral imager for land applications which include environmental monitoring, agriculture and forestry, disaster monitoring

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
M60	MOMS-2P	Owner & Distributor DLR, RKA	Type: Instrument on MIR Space Station Altitude: 300 km Inclination: 51.6 deg URL: <a href="http://www.dlr.de/rb/en/desktopdefault.aspx/tabid-2814/4262_read-6334/">http://www.dlr.de/rb/en/desktopdefault.aspx/tabid-2814/4262_read-6334/</a>	Mission: Completed Timeframe: Launch Date: May 1996 EOL Date: 1997 Instrument: Not Operational	High resolution optical imagers	<b>Resolution Summary</b> " 6 / 18 m <b>Swath Summary</b> 48 / 100 km <b>Waveband Summary</b> 4 bands 0.44 – 0.81 µm	High resolution multi-spectral imager for a variety of geoscientific applications
M61	WorldView-2	Owner: Digital Globe Distributor: EUSI	Type: Sun-synchronous Altitude: 770 km Period: 100 mins Inclination: 97.2 deg Repeat cycle: TBD days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.digitalglobe.com/digitalglobe2/file.php/786/WorldView2-DS-WV2.pdf">http://www.digitalglobe.com/digitalglobe2/file.php/786/WorldView2-DS-WV2.pdf</a>	Mission: on-going Timeframe Launch Date: 8 Oct 2009 EOL Date: 8 Jan 2017 Instrument: Operational	High resolution optical imagers	<b>Resolution Summary</b> 0.46 / 1.84 m <b>Swath Summary</b> 16.4 km <b>Waveband Summary</b> 8 bands 0.40 – 1.04 µm	High resolution multi-spectral imager for a variety of geoscientific applications
M62	GMES Space Component Data Access Optical Data from several Contributing Missions	Distributor: ESA	Different Missions	Missions: Ongoing GMES Contributing Missions	High resolution optical imagers	Various Characteristics	
M63	IMAGE 2006 European Coverage Dataset	Distributor: ESA	Different Missions	Missions: Four Different Missions	High resolution optical imagers	IMAGE 2006 based on data from SPOT-4 HRVIR, SPOT-5 HRG and IRS-P6 LISS III.	
M64	European Cities and TropForest 2010 datasets	Distributor: ESA	Different Missions	Missions: Two Different Missions	High resolution optical imagers	European Cities Coverage based on KOMPSAT-1 data. TropForest 2010 based on DEIMOS-1 data.	
M65	Formosat-2	Owner: NSPO Distributor Spotimage, Agreement with	Type: Altitude: 891 km Period: 103 mins Inclination: 97.7 deg Repeat cycle: 1 days	Mission: On-going Timeframe: Launch Date: May 2004	High resolution optical imagers	Providing 2 meter resolution of image in panchromatic band and 8 meter resolution in multispectral bands with swath of 24 km	Earth observation systems offer more or less broad coverage and ever-finer detail, but their revisit frequency is still limited for surveillance purposes.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
		ESA	LST: 10:00 Longitude (if geo): Asc/desc: URL: Not Available	Planned EOL Dates: May 2010 Instrument: Operational			FORMOSAT-2, the first and only high-resolution satellite with a daily revisit capability, overcomes this obstacle to provide a new response to your surveillance needs.daily revisit capability for and large ground coverage for applications including disaster investigation, environment monitoring, and vegetation evaluation.

### 3.2 High and Very high resolution multi-spectral imaging missions/sensors. Table 2

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
M1	SPOT 1 HRV (1) and HRV (2)	ESA: South Europe and West-North Africa CNES: Worldwide	ESA: Jan 1989 – Feb 2002 CNES: 22 Feb 1986 - Nov 2003	ESA: INSA Maspalomas Volume: 3.23 TB CNES Toulouse : 270 TB currently for SPOT serie	ESA: Level 0: WILMA CNES: Level 0: Gerald	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a> CNES: <a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	ESA: V. Beruti, M. Albani, CNES: M.Duplaa
M2	SPOT 2 HRV(1) and HRV (2)	ESA: South Europe and West-North Africa CNES: Worldwide	ESA: Jul 1997 – Sep 2007 CNES: 22 Jan 1990 - 30 Jun 2009	ESA: INSA Maspalomas Volume: 8.07 TB CNES Toulouse : 270 TB currently for SPOT serie	ESA: Level 0: WILMA CNES: Level 0: Gerald	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a> CNES: <a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	ESA: V. Beruti, M. Albani, CNES: M.Duplaa
M3	SPOT 3 HRV(1) and HRV (2)	Worldwide	CNES: 25 Sep 1993 - 14 Nov 1996	CNES Toulouse : 270 TB currently for SPOT serie	Level 0: Gerald	CNES: <a href="http://www.spotimage.com">http://www.spotimage.com</a>	CNES: M.Duplaa
M4	SPOT 4 HRVIR(1)	Worldwide	CNES : 24 Mar 1998 – to date	CNES Toulouse : 270 TB currently for SPOT serie	Level 0: Gerald	<a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	CNES: M.Duplaa
M5	SPOT 4 HRVIR(2)	Worldwide	CNES : 24 Mar 1998 – to date	CNES Toulouse : 270 TB currently for SPOT serie	Level 0: Gerald	<a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	CNES: M.Duplaa
M6	SPOT 5 HRG(1)	Worldwide	CNES : 04 May 2002 – to date	CNES Toulouse : 270 TB currently for SPOT serie	Level 0: Gerald	<a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	CNES: M.Duplaa

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
M7	SPOT 5 HRG(2)	Worldwide	CNES : 04 May 2002 – to date	CNES Toulouse : 270 TB currently for SPOT serie	Level 0: Gerald	<a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	CNES: M.Duplaa
M8	SPOT 5 HRS	Worldwide	CNES : 04 May 2002 – to date	CNES Toulouse : 270 TB currently for SPOT serie	Level 0: Gerald	<a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	CNES: M.Duplaa
M9	ALOS PRISM	European coverage North African coverage Part of Antarctica	ESA: Tromso: Jun 2006 – to date  Matera: Jul 2006 – to date  ESRIN: May 2006 – Sep 2009	ESA: KSAT Tromso Volume: 124 TB  ESA: ASI Matera Volume: 25.66 TB  ESA: ESRIN Frascati Volume: 4.4 TB	Level 0: CEOS	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M10	ALOS AVNIR-2	European coverage North African coverage Part of Antarctica	ESA: Tromso: Jun 2006 – to date  Matera: Jul 2006 – to date  ESRIN: April 2006 - to date	ESA: KSAT Tromso Volume: 20 TB  ESA: ASI Matera Volume: 13.79 TB  ESA: ESRIN Frascati Volume: 2.5 TB	Level 0: CEOS	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M11	IKONOS-2	EUSI : European and Middle East coverage  e-GEOS: acquired over Europe and Northern Africa + a copy of all the e-GEOS world-wide planning orders done by European Customers	EUSI: Dec 1999 – Dec 2008  e-GEOS: Since 1 January 2009	EUSI: DLR Oberpfaffenhofen Volume: 10.8 TB  e-GEOS: DLR Neustrelitz, managed by Euromap. Volume: approx. 0.5 TB	EUSI: Level 0: TBD  e-GEOS: Level 0: AXD	EUSI: <a href="http://www.euspaceimaging.com/ordering/">http://www.euspaceimaging.com/ordering/</a>  e-GEOS: <a href="http://www.e-geos.it/">http://www.e-geos.it/</a>	EUSI: G. Ellis  e-GEOS: A. Oddone
M12	IRS-1C LISS-III (Linear Imaging Self Scanner)	Euromap: European Coverage	Euromap: May 1996 – Oct 2004	Euromap at DLR Neustrelitz Volume: 30.6 TB for all IRS-1C data	Euromap: Level 0: raw	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a>	Euromap: F. Barner

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
					Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	<a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	
M13	IRS-1C PAN (Panchromatic sensor)	Euromap: European Coverage	Euromap: May 1996 – Oct 2004	Euromap at DLR Neustrelitz Volume: 30.6 TB for all IRS-1C data	Euromap: Level 0: raw Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	Euromap: F. Barner
M14	IRS-1D LISS-III (Linear Imaging Self Scanner)	Euromap: European Coverage	Euromap: Nov 1997 – Sep 2005	Euromap at DLR Neustrelitz Volume: 26.8 TB for all IRS-1D data	Euromap: Level 0: raw Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	Euromap: F. Barner
M15	IRS-1D PAN (Panchromatic sensor)	Euromap: European Coverage	Euromap: Nov 1997 – Sep 2005	Euromap at DLR Neustrelitz Volume: 26.8 TB for all IRS-1D data	Euromap: Level 0: raw Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	Euromap: F. Barner
M16	IRS P5 Cartosat-1	Euromap: European Coverage	Euromap: Nov 2007 – to date	Euromap at DLR Neustrelitz Volume: 7.1 TB	Euromap:	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a>	Euromap: F. Barner

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
					Level 0: NRSA Fred Level 1: Fast Format, Geotiff	<a href="http://cts/serv_003.html">cts/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	
M17	IRS-P6 Resourcesat-1 LISS-III	Euromap: European Coverage	Euromap: Nov 2004 – to date	Euromap at DLR Neustrelitz Volume: 21.6 TB for all IRS-P6 data	Euromap: Level 0: NRSA Fred Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	Euromap: F. Barner
M18	IRS-P6 Resourcesat-1 LISS-IV	Euromap: European Coverage	Euromap: Nov 2004 – to date	Euromap at DLR Neustrelitz Volume: 21.6 TB for all IRS-P6 data	Euromap: Level 0: NRSA Fred Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	Euromap: F. Barner
M19	IRS-P6 Resourcesat-1 AWiFS	Euromap: European Coverage	Euromap: Nov 2004 – to date	Euromap at DLR Neustrelitz Volume: 21.6 TB for all IRS-P6 data	Euromap: Level 0: TBD Level 1: Fast Format, Super Structure BSQ, Geotiff Level 2: Fast Format, Super Structure BSQ, Geotiff	Euromap/DLR: <a href="http://www.euromap.de/products/serv_003.html">http://www.euromap.de/products/serv_003.html</a> <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	Euromap: F. Barner
M20	IRS Resourcesat-2	N.A.	N.A.	Euromap at DLR Neustrelitz Volume: N.A.	TBD	TBD	TBD
M21	DMC-UK-1	DMC Imaging: TBD  ESA: European coverage 2007	DMC Imaging: TBD  ESA: ESRIN: Apr 2007 – Sep 2007	DMC Imaging: Guildford (SSTL) Volume: TBD  ESA ESRIN Frascati Volume: 60 GB	DMC Imaging: TBD  ESA: Level 1, Format TBD	DMC Imaging: TBD  ESA: <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	DMC Imaging: TBD  ESA: V.Beruti, M.Albani
M22	DMCii-UK-2	DMC Imaging: TBD	DMC Imaging: TBD	DMC Imaging: Guildford (SSTL)	DMC Imaging: TBD	DMC Imaging: TBD	DMC Imaging: TBD

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
				Volume: TBD			
M23	Proba-1 CHRIS	Spots around the world	ESA ESRIN: May 2002 – to date Kiruna: 2002 – to date	ESA: ESRIN Frascati Volume: 400 GB ESA: SSC Kiruna ESRANGE Volume: 280 GB	ESA: TBD	ESA; <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a> On-line archive: <a href="https://oa-es.eo.esa.int/ra/">https://oa-es.eo.esa.int/ra/</a>	ESA: V. Beruti, M. Albani
M24	Proba-1 HRC	Spots around the world	ESA: ESRIN: Oct 2002 - to date Kiruna: 2002 – to date	ESA: ESRIN Frascati Volume: 15 GB ESA: SSC Kiruna ESRANGE Volume: Included above	ESA: TBD	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a> On-line archive: <a href="https://oa-es.eo.esa.int/ra/">https://oa-es.eo.esa.int/ra/</a>	ESA: V. Beruti, M. Albani
M25	LANDSAT 1 Multispectral scanner	ESA: Europe and North Africa	ESA: Matera: Apr 1975 – Oct 1976	ESA: ASI Matera Volume 0.6 TB	ESA: Level 0: WILMA	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M26	LANDSAT 2 Multispectral scanner	ESA: Europe and North Africa	ESA: Matera: Jul 1975 – Mar 1982 Kiruna: May 1978 – Mar 1982	ESA: ASI Matera Volume 3.2 TB ESA: SSC Kiruna ESRANGE Volume: 3.9 TB	ESA: Level 0: WILMA	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M27	LANDSAT 3 Multispectral scanner	ESA: Europe and North Africa	ESA: Matera: Jul 1978 – Oct 1982 Kiruna: Jul 1978 – Nov	ESA: ASI Matera Volume 0.49 TB plus 500 HDDT tapes to be transcribed	ESA: Level 0: WILMA	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			1982	ESA: SSC Kiruna ESRANGE Volume: 3 TB		<a href="#">.html</a>	
M28	LANDSAT 4 Multispectral Scanner	ESA: Europe and North Africa	ESA: Maspalomas, Jul 1984 – Dec 1986  Matera: Aug 1982 – Sep 1987  Kiruna: Aug 1982 – Oct 1987	ESA: INSA Maspalomas Volume: 370 GB  ESA: ASI Matera Volume 1.4 TB  ESA: SSC Kiruna ESRANGE Volume 3.8 TB	ESA:  Level 0: WILMA	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M29	LANDSAT 4 Thematic Mapper	ESA: Europe and North Africa	ESA: Matera: Dec 1982 – Dec 1982	ESA: ASI Matera Volume 12 GB	ESA:  Level 0: WILMA	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M30	LANDSAT5 Multispectral Scanner	ESA: Europe and North Africa	ESA: Maspalomas, Jul 1984 – to date  Matera: Apr 1984 – Aug 1997  Kiruna: Mar 1984 – Mar 1999	ESA: INSA Maspalomas Volume: 1.39 TB  ESA: ASI Matera Volume 6.05 TB  ESA: SSC Kiruna ESRANGE Volume 22 TB	ESA:  Level 0: WILMA	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M31	LANDSAT 5 Thematic Mapper	ESA: Europe and North Africa	ESA: Maspalomas, Jun 1987 – to date  Matera: Apr 1984 – to date  Kiruna: Apr 1984 – Oct 2009	ESA: INSA Maspalomas Volume: 5.94 TB  ESA: ASI Matera Volume 100.65 TB  ESA: SSC Kiruna ESRANGE Volume 187.7 TB	ESA:  Level 0: WILMA	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
M32	LANDSAT 7 Enhanced Thematic Mapper Plus	ESA: Europe and North Africa  DLR: Europe and North Africa	ESA: Maspalomas, Dec 1999 – Dec 2003  Matera: Jul 1999 – Dec 2003  Neustrelitz: Jul 1999 – Jun 2003  Kiruna: Jul 1999 – Jun 2003  DLR: 1999 - 2003	ESA: INSA Maspalomas Volume: 3.01 TB  ESA: ASI Matera Volume 19.54 TB  ESA: DLR Neustrelitz Volume 17 TB  ESA: SSC Kiruna ESRANGE Volume 30 TB  DLR: Neustrelitz Volume 22.5 TB	ESA: Level 0: WILMA  DLR: Level 0: CEOS	Eurimage: <a href="http://www.eurimage.com/">http://www.eurimage.com/</a>  ESA: <a href="http://earth.esa.int/resources/catalogues/">http://earth.esa.int/resources/catalogues/</a>  <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>  DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a> (catalog only)	ESA: V. Beruti, M. Albani  DLR: Klaus Dieter Missling
M33	KOMPSAT-2	ESA: Worldwide	ESA: Tromso: Mar 2008 - to date	ESA: KSAT Tromso Volume: 330 TB	ESA: Level 0, format modified CCSDS	ESA: <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M34	TOPSAT	QinetiC: TBD	QinetiC: TBD	QinetiC: Farnborough Volume: TBD	QinetiC: TBD	QinetiC: TBD	QinetiC: TBD
M35	DMC Deimos-1	Deimos Imaging: Most of the world	Deimos Imaging: TBD	Deimos Imaging: SSTL Guildford Volume: TBD	Deimos Imaging: TBD	Deimos Imaging: TBD	Deimos Imaging: TBD
M36	VENUS	N.A.	N.A.	CNES Toulouse Volume: N.A.	TBD	TBD	CNES: M.Duplaa
M37	GeoEye-1 (Orbview-5)	e-GEOS acquired over Europe and Northern Africa + a copy of all the e-GEOS world-wide planning orders done by European Customers	e-GEOS: Since 1 July 2009	e-GEOS: DLR Neustrelitz, managed by Euromap. Volume: approx. 2 TB	e-GEOS: Level 0: AXD	<a href="http://www.e-geos.it/">http://www.e-geos.it/</a>	e-GEOS: A. Oddone
M38	Prisma	N.A.	N.A.	ASI Matera Volume: N.A.	TBD	TBD	TBD

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
M39	Sentinel-2a and 2b	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
M40	RapidEye Multi Spectral Imager	Rapideye: Global  DLR: Various locations worldwide	Rapideye: Feb 2009 - to date  DLR: Feb 2009 - to date	Rapideye Brandenburg Volume: 1530 products archived.  DLR: Neustrelitz Volume: 1 TB	Rapideye: Level 0: not archived. Level 1: NITF 2.0 (1B) Level 2: GeoTIFF (2A) Level 3: GeoTIFF (3A)  DLR: Level 0: N/A Level 1: NITF 2.0 (1B) Level 2: GeoTIFF (2A) Level 3: GeoTIFF (3A)	Rapideye: <a href="http://kiosk.rapideye.de/">http://kiosk.rapideye.de/</a>  DLR: Scientific data pool - RESA, <a href="https://centaurus.caf.dlr.de:8443/eoweb-ng/template/default/welcome/entryPage.vm">https://centaurus.caf.dlr.de:8443/eoweb-ng/template/default/welcome/entryPage.vm</a>	Rapideye: M. Vitale  DLR: Klaus Dieter Missling
M41	EnMAP	N.A.	N.A.	DLR Oberpfaffenhofen Volume : N.A.	TBD	TBD	DLR: E. Mikusch
M42	Pleiades 1 High-Resolution Imager	N.A.	N.A.	CNES Toulouse Volume : N.A.	TBD	TBD	CNES: M.Duplaa
M43	Pleiades 2 High-Resolution Imager	N.A.	N.A.	CNES Toulouse Volume : N.A.	TBD	TBD	CNES: M.Duplaa
M44	SEOSAT	N.A.	N.A.	CDTI: TBD Volume: N.A.	TBD	TBD	TBD
M45	CBERS-3 IRS	N.A.	N.A.	TBD	TBD	TBD	TBD
M46	CBERS-3 Multispectral CCD Camera	N.A.	N.A.	TBD	TBD	TBD	TBD
M47	CBERS-3 Panchromatic and multispectral imager	N.A.	N.A.	TBD	TBD	TBD	TBD
M48	CBERS-3 Wide Field Imager 2	N.A.	N.A.	TBD	TBD	TBD	TBD
M49	CBERS- 4 IRS	N.A.	N.A.	TBD	TBD	TBD	TBD
M50	CBERS-4 Multispectral CCD Camera	N.A.	N.A.	TBD	TBD	TBD	TBD
M51	CBERS-4 Panchromatic and multispectral imager	N.A.	N.A.	TBD	TBD	TBD	TBD

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
M52	CBERS-4 Wide Field Imager 2	N.A.	N.A.	TBD	TBD	TBD	TBD
M53	MOS-1 Multispectral Electronic Self-Scanning Radiometer	ESA: European coverage	ESA Maspalomas: Nov 1987 – Mar 1992 Matera: Nov 1987 – Mar 1992 Kiruna: Nov 1987 – Mar 1992	ESA: INSA Maspalomas Volume: 2.14 TB as HDDT tapes  ESA: SSC Kiruna Estrange Volume: 883 HDDT tapes (MOS1 + MOS1b) to be transcribed  ESA: ASI Matera Volume: 750 HDDT tapes (MOS1 + MOS1b) to be transcribed	Level 0: telemetry format	Not Available	ESA: V. Beruti, M. Albani
M54	MOS-1 Microwave Scanning Radiometer	ESA: European coverage	As above	Included above	ESA: Level 0, telemetry format	Not Available	ESA: V. Beruti, M. Albani
M55	MOS – 1 Visible and Thermal Infrared Radiometer	ESA: European coverage	As above	Included above	ESA: Level 0, telemetry format	Not Available	ESA: V. Beruti, M. Albani
M56	MOS-1b Multispectral Electronic Self-Scanning Radiometer	ESA: European coverage	As above	Included above	ESA: Level 0, telemetry format	Not Available	ESA: V. Beruti, M. Albani
M57	MOS- 1b Microwave Scanning Radiometer	ESA: European coverage	As above	Included above	ESA: Level 0, telemetry format	Not Available	ESA: V. Beruti, M. Albani
M58	MOS-1b Visible and Thermal Infrared Radiometer	ESA: European coverage	As above	Included above	ESA: Level 0, telemetry format	Not Available	ESA: V. Beruti, M. Albani
M59	JERS-1 OPS	ESA: European coverage  North African coverage	ESA: Matera: Oct 1992 – Oct 1998  Kiruna: Feb 1993 – Mar 1993	ESA: ASI Matera Volume: 1.09 TB  ESA: SSC Kiruna Estrange Volume: 0.17 TB	ESA: Level 0, WILMA	ESA; <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
M60	MOMS-2P	DLR: Various locations betw. 28.5° north and south	DLR: 1996- 1997	DLR Neustrelitz Volume: 2.3 TB	DLR: Level 0: HDF Level 1: HDF	DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	DLR: K.-D. Missling
M61	WorldView-2	EUSI: European coverage	EUSI: Mar 2010 – to date	EUSI: DLR Oberpfaffenhofen Volume: 7.6 TB	EUSI: Level 0: ERIAD	EUSI: <a href="http://www.euspaceimaging.com/ordering/">http://www.euspaceimaging.com/ordering/</a>	EUSI: G. Ellis
M62	GMES Space Component Data Access Optical Data from several Contributing Missions	European and African Coverage	ESA: Jan 2009 – to date	ESA ESRIN: 8.3 TB including SAR Sensors	Various formats	ESA: <a href="http://gmesdata.esa.int/web/gsc/home">http://gmesdata.esa.int/web/gsc/home</a>	ESA: V. Beruti, M. Albani
M63	IMAGE 2006 Dataset	European and African Coverage	ESA: data from 2005 to 2007 from SPOT-4/5 and IRS-P6	ESA ESRIN: Volume TBD	Various formats	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M64	European Cities and TropForest 2010 datasets	European Cities and Forests	ESA: KOMPSAT-1 data from 2000-2006 DEIMOS-1 data from 2010	ESA TBD: Volume: TBD	Format: TBD	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
M65	Formosat-2	Owner: NSPO Distributor Spotimage, Agreement with ESA	ESA: From April 2010 – to date	ESA TBC: Volume: TBD	Format: TBD	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

## 4. C3: MEDIUM RESOLUTION LAND AND OCEAN MONITORING (WIDE SWATH OCEAN COLOUR AND SURFACE TEMPERATURE SENSORS, ALTIMETER).

### 4.1 Medium resolution Land and Ocean monitoring (wide swath ocean color and surface temperature sensors, altimeter). Table 1

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O1	METOP-A Advanced Microwave Sounding Unit-A	Owner and Distributor: EUMETSAT	Type: Sun-synchronous Altitude: 840 km Period: 107.1 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LPmetop.html">http://www.esa.int/esaLP/LPmetop.html</a>	Mission: On-going Timeframe: Launch date: 19 Oct 2006 Planned EOL Date: 30 Apr 2012 Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 48 km <b>Swath Summary</b> 2054 km <b>Accuracy Summary</b> Temperature profile: 2 K, humidity: 3 kg/m <sup>2</sup> , ice & snow cover: 10% <b>Waveband Summary</b> Microwave: 15 channels, 23.8 - 89.0 GHz	All-weather night-day temperature sounding to an altitude of 45 km
O2	METOP-A Advanced Scatterometer	Owner and Distributor: EUMETSAT	Same as above	Mission: On-going Timeframe: Launch date: 19 Oct 2006 EOL Date: 30 Apr 2012 Instrument: Operational	Scatterometers	<b>Resolution Summary</b> Hi-res mode: 25 - 37 km, Nominal mode: 50 km <b>Swath Summary</b> Continuous; 2 x 500 km swath width <b>Accuracy Summary</b> Wind speeds in range 4 - 24 m/s; 2 m/s and direction accuracy of 20 deg <b>Waveband Summary</b> Microwave: C Band, 5.256 GHz	Sea ice cover, sea ice type and wind speed over sea surface measurements. Air pressure over ocean, polar ice contours, ice/snow imagery, soil moisture.
O3	METOP-A Advanced Very High Resolution Radiometer/3	Owner and Distributor: EUMETSAT	Same as above	Mission: On-going Timeframe: Launch Date: 19 Oct 2006 Planned EOL Date: 30 Apr	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1.1 km <b>Swath Summary</b> 3000 km approx, Ensures full global coverage twice daily <b>Accuracy Summary Waveband Summary</b> VIS: 0.58 - 0.68 μm, NIR: 0.725 - 1.1 μm, SWIR: 1.58 - 1.64 μm, MWIR: 3.55 - 3.93 μm, TIR: 10.3 -	Measurements of land and sea surface temperature, cloud cover, snow and ice cover, soil moisture and vegetation indices. Data also used for volcanic eruption monitoring

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				2012 Instrument: Operational		11.3 $\mu\text{m}$ , 11.5 - 12.5 $\mu\text{m}$	
O4	METOP-A High Resolution Infra-red Sounder/4	Owner and Distributor: EUMETSAT	Same as above	Mission: On-going  Timeframe:  Launch Date: 19 Oct 2006  Planned EOL Date: 30 Apr 2012  Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 20.3 km <b>Swath Summary</b> 2240 km <b>Waveband Summary</b> VIS - TIR: 0.69 - 14.95 $\mu\text{m}$ (20 channels)	Atmospheric temperature profiles and data on cloud parameters, humidity soundings, water vapour, total ozone content, and surface temperatures. Same as HIRS/3, with 10 km IFOV
O5	METOP-A Infrared Atmospheric Sounding Interferometer	Owner and Distributor: EUMETSAT	Same as above	Mission: On-going  Timeframe:  Launch Date: 19 Oct 2006  Planned EOL Date: 30 Apr 2012  Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> Vertical: 1 - 30 km, Horizontal: 25 km <b>Swath Summary</b> 2052 km <b>Accuracy Summary</b> Temperature: 0.5 - 2 K, specific humidity: 0.1 - 0.3 g/kg, ozone, trace gas profile: 10% <b>Waveband Summary</b> MWIR - TIR: 3.4 - 15.5 $\mu\text{m}$ with gaps at 5 $\mu\text{m}$ and 9 $\mu\text{m}$	Measures tropospheric moisture and temperature, column integrated contents of ozone, carbon monoxide, methane, dinitrogen oxide and other minor gases which affect tropospheric chemistry. Also measures sea surface and land temperature
O6	METOP-B  Advanced Microwave Sounding Unit- A	Owner and Distributor: EUMETSAT	Type: Sun-synchronous Altitude: 840 km Period: 101.7 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LPmetop.html">http://www.esa.int/esaLP/LPmetop.html</a>	Mission: Future  Timeframe:  Planned Launch Date: 02 Apr 2012  Planned EOL Date: 01 May 2017  Instrument: Not Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 48 km <b>Swath Summary</b> 2054 km <b>Accuracy Summary</b> Temperature profile: 2 K, humidity: 3 kg/m <sup>2</sup> , ice & snow cover: 10% <b>Waveband Summary</b> Microwave: 15 channels, 23.8 - 89.0 GHz	All-weather night-day temperature sounding to an altitude of 45 km
O7	METOP-B  Advanced Scatterometer	Owner and Distributor: EUMETSAT	Same as above	Mission: Future  Timeframe:  Planned Launch Date: 02	Scatterometers	<b>Resolution Summary</b> Hi-res mode: 25 - 37 km, Nominal mode: 50 km <b>Swath Summary</b> Continuous; 2 x 500 km swath width <b>Accuracy Summary</b> Wind speeds in	Sea ice cover, sea ice type and wind speed over sea surface measurements. Air pressure over ocean, polar ice contours, ice/snow imagery,

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Apr 2012  Planned EOL Date: 01 May 2017  Instrument: Not Operational		range 4 - 24 m/s: 2 m/s and direction accuracy of 20 deg <b>Waveband Summary</b> Microwave: C Band, 5.256 GHz	soil moisture.
O8	METOP-B  Advanced Very High Resolution Radiometer/3	Owner and Distributor: EUMETSAT	Same as above	Mission: Future  Timeframe:  Planned Launch date: 02 Apr 2012  Planned EOL Date: 01 May 2017  Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1.1 km <b>Swath Summary</b> 3000 km approx, Ensures full global coverage twice daily <b>Waveband Summary</b> VIS: 0.58 - 0.68 µm, NIR: 0.725 - 1.1 µm, SWIR: 1.58 - 1.64 µm, MWIR: 3.55 - 3.93 µm, TIR: 10.3 - 11.3 µm, 11.5 - 12.5 µm	Measurements of land and sea surface temperature, cloud cover, snow and ice cover, soil moisture and vegetation indices. Data also used for volcanic eruption monitoring
O9	METOP-B High Resolution Infra-red Sounder/4	Owner and Distributor: EUMETSAT	Same as above	Mission: Future  Timeframe:  Planned Launch Date: 02 Apr 2012  Planned EOL Date: 01 May 2017  Instrument: Not Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 20.3 km <b>Swath Summary</b> 2240 km <b>Waveband Summary</b> VIS - TIR: 0.69 - 14.95 µm (20 channels)	Atmospheric temperature profiles and data on cloud parameters, humidity soundings, water vapour, total ozone content, and surface temperatures. Same as HIRS/3, with 10 km IFOV
O10	METOP-B Infrared Atmospheric Sounding Interferometer	Owner and Distributor: EUMETSAT	Same as above	Mission: Future  Timeframe:  Planned Launch Date: 02 Apr 2012  Planned EOL Date: 01 May 2017	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> Vertical: 1 - 30 km, Horizontal: 25 km <b>Swath Summary</b> 2052 km <b>Accuracy Summary</b> Temperature: 0.5 - 2 K, specific humidity: 0.1 - 0.3 g/kg, ozone, trace gas profile: 10% <b>Waveband Summary</b> MWIR - TIR: 3.4 - 15.5 µm with gaps at 5 µm and 9 µm	Measures tropospheric moisture and temperature, column integrated contents of ozone, carbon monoxide, methane, dinitrogen oxide and other minor gases which affect tropospheric chemistry. Also measures sea surface and

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Instrument: Not Operational			land temperature
O11	METOP- C Advanced Microwave Sounding Unit-A	Owner and Distributor: EUMETSAT	Type: Sun-synchronous Altitude: 840 km Period: 101.7 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LPmetop.html">http://www.esa.int/esaLP/LPmetop.html</a>	Mission: Future Timeframe: Planned Launch Date: 02 Apr 2016 Planned EOL Date: 01 Dec 2021 Instrument: Not Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 48 km <b>Swath Summary</b> 2054 km <b>Accuracy Summary</b> Temperature profile: 2 K, humidity: 3 kg/m2, ice & snow cover: 10% <b>Waveband Summary</b> Microwave: 15 channels, 23.8 - 89.0 GHz	All-weather night-day temperature sounding to an altitude of 45 km
O12	METOP- C Advanced Scatterometer	Owner and Distributor: EUMETSAT	Same as above	Mission: Future Timeframe: Planned Launch Date: 02 Apr 2016 Planned EOL Date: 01 Dec 2021 Instrument: Not Operational	Scatterometers	<b>Resolution Summary</b> Hi-res mode: 25 - 37 km, Nominal mode: 50 km <b>Swath Summary</b> Continuous; 2 x 500 km swath width <b>Accuracy Summary</b> Wind speeds in range 4 - 24 m/s: 2 m/s and direction accuracy of 20 deg <b>Waveband Summary</b> Microwave: C Band, 5.256 GHz	Sea ice cover, sea ice type and wind speed over sea surface measurements. Air pressure over ocean, polar ice contours, ice/snow imagery, soil moisture.
O13	METOP- C Advanced Very High Resolution Radiometer/3	Owner and Distributor: EUMETSAT	Same as above	Mission: Future Timeframe: Planned Launch Date: 02 Apr 2016 Planned EOL Date: 01 Dec 2021 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1.1 km <b>Swath Summary</b> 3000 km approx, Ensures full global coverage twice daily <b>Waveband Summary</b> VIS: 0.58 - 0.68 µm, NIR: 0.725 - 1.1 µm, SWIR: 1.58 - 1.64 µm, MWIR: 3.55 - 3.93 µm, TIR: 10.3 - 11.3 µm, 11.5 - 12.5 µm	Measurements of land and sea surface temperature, cloud cover, snow and ice cover, soil moisture and vegetation indices. Data also used for volcanic eruption monitoring
O14	METOP- C High Resolution Infra-red	Owner and Distributor: EUMETSAT	Same as above	Mission: Future Timeframe:	Atmospheric temperature and	<b>Resolution Summary</b> 20.3 km <b>Swath Summary</b> 2240 km <b>Waveband Summary</b> VIS - TIR: 0.69 - 14.95 µm	Atmospheric temperature profiles and data on cloud

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Sounder/4			Planned Launch Date: 02 Apr 2016  Planned EOL Date: 01 Dec 2021  Instrument: Not Operational	humidity sounders	(20 channels)	parameters, humidity soundings, water vapour, total ozone content, and surface temperatures. Same as HIRS/3, with 10 km IFOV
O15	METOP- C Infrared Atmospheric Sounding Interferometer	Owner and Distributor: EUMETSAT	Same as above	Mission: Future  Timeframe:  Planned Launch Date: 02 Apr 2016  Planned EOL Date: 01 Dec 2021  Instrument: Not Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> Vertical: 1 - 30 km, Horizontal: 25 km <b>Swath Summary</b> 2052 km <b>Accuracy Summary</b> Temperature: 0.5 - 2 K, specific humidity: 0.1 - 0.3 g/kg, ozone, trace gas profile: 10% <b>Waveband Summary</b> MWIR - TIR: 3.4 - 15.5 µm with gaps at 5 µm and 9 µm	Measures tropospheric moisture and temperature, column integrated contents of ozone, carbon monoxide, methane, dinitrogen oxide and other minor gases which affect tropospheric chemistry. Also measures sea surface and land temperature
O16	NOAA – 7 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 850 km Period: 101.9 mins Inclination: 98.9 deg Repeat cycle: 0.5 days LST: Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission : Completed  Timeframe:  Launch Date: 23 Jun 1981  EOL Date: June 1986  Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1.1 km <b>Swath Summary</b> 3000 km approx <b>Waveband Summary</b> VIS: 0.58 - 0.68 µm, NIR: 0.725 - 1.1 µm, MWIR: 3.55 - 3.93 µm, TIR: 10.3 - 11.3 µm, 11.5 - 12.5 µm	Measurements of land and sea surface temperature, cloud cover, snow and ice cover, soil moisture and vegetation indices. Data also used for volcanic eruption monitoring
O17	NOAA – 8 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Same as NOAA - 7	Mission : Completed  Timeframe:  Launch Date: 28 Mar 1983  EOL Date: 29 Dec 1985  Instrument: Not Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O18	NOAA – 9 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Same as NOAA - 7	Mission : Completed Timeframe: Launch Date: 12 Dec 1984 EOL Date: 31 Dec 1997 Instrument: Not Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O19	NOAA – 10 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 804 km Period: 101.1 mins Inclination: 98.6 deg Repeat cycle: 0.5 days LST: 4:38 Longitude (if geo): Asc/desc: Descending <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission : Completed Timeframe: Launch Date 17 Sep 1986 EOL Date: 31 Dec 1997 Instrument: Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O20	NOAA – 11 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 845 km Period: 101.9 mins Inclination: 99.1 deg Repeat cycle: LST: 22:37 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission : Completed Timeframe: Launch Date: 24 Sep 1988 EOL Date: 30 Sep 2004 Instrument: Not Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O21	NOAA – 12 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 850 km Period: 101.3 mins Inclination: 98.5 deg Repeat cycle: LST: 4:49 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission : Completed Timeframe: Launch Date: 14 May 1991 EOL Date: 31 Dec 2005 Instrument: Not Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O22	NOAA – 14 Advanced Very High Resolution Radiometer/2	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 850 km Period: 102.1 mins Inclination: 99.1 deg Repeat cycle: LST: 17:52 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission: Completed  Timeframe: Launch Date :30 Dec 1994 EOL Date: 31 Dec 2005  Instrument: Not Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O23	NOAA – 15 Advanced Very High Resolution Radiometer/3	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 813 km Period: 101.4 mins Inclination: 98.6 deg Repeat cycle: LST: 7:08 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission: On-going  Timeframe: Launch Date: 01 May 1998  Planned EOL Date: 31 Dec 2010  Instrument Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O24	NOAA – 16 Advanced Very High Resolution Radiometer/3	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 870 km Period: 102 mins Inclination: 98.8 deg Repeat cycle: LST: 13:54 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission : On-going  Timeframe : Launch Date: 21 Sep 2000 Planned EOL Date: 31 Dec 2012  Instrument : Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O25	NOAA – 17 Advanced Very High Resolution Radiometer/3	Owner: NOAA  Agreement with ESA	Type: Sun-synchronous Altitude: 833 km Period: 101.4 mins Inclination: 98.75 deg Repeat cycle: LST: 10:00 Longitude (if geo): Asc/desc: Descending	Mission : On-going  Timeframe : Launch Date: 24 Jun 2002 Planned EOL Date: 31 Dec 2014	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Instrument : Operational			
O26	NOAA – 18 Advanced Very High Resolution Radiometer/3	Owner: NOAA Agreement with ESA	Type: Sun-synchronous Altitude: 870 km Period: 102.1 mins Inclination: 98.75 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission : On-going Timeframe : Launch Date: 24 Jun 2002 Planned EOL Date: 31 Dec 2014 Instrument : Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O27	NOAA – 19 Advanced Very High Resolution Radiometer/3	Owner: NOAA Agreement with ESA	Type: Sun-synchronous Altitude: 870 km Period: 102.1 mins Inclination: 98.75 deg Repeat cycle: LST: 14:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.oso.noaa.gov/poes/">http://www.oso.noaa.gov/poes/</a>	Mission: On-going Timeframe: Launch Date: 04 Feb 2009 Planned EOL Date: 01 Mar 2016 Instrument: Operational	Same as NOAA - 7	Same as NOAA - 7	Same as NOAA - 7
O28	ENVISAT MERIS	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://envisat.esa.int/">http://envisat.esa.int/</a>	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Waveband:</b> VIS - NIR: 15 bands selectable across range: 0.4 - 1.05 $\mu\text{m}$ (bandwidth programmable between 0.0025 and 0.03 $\mu\text{m}$ ) <b>Spatial resolution:</b> Ocean: 1040 x 1200 m, Land & coast: 260 x 300 m <b>Swath width:</b> 1150 km, global coverage every 3 days <b>Accuracy:</b> Ocean colour bands typical S:N = 1700	Main objective is monitoring marine biophysical and biochemical parameters. Secondary objectives are related to atmospheric properties such as cloud and water vapour and to vegetation conditions on land surfaces
O29	ERS-1 Along Track Scanning Radiometer	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30	Mission: Completed Timeframe: Launch Date: Jul 1991 EOL Date: Mar 2000	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> IR ocean channels: 1 x 1 km, Microwave near-nadir viewing: 20 km instantaneous field of view <b>Swath Summary</b> 500 km <b>Accuracy Summary</b> Sea surface temperature to <0.5 K over 0.5 x 0.5 deg (lat/long)	Measurements of sea surface temperature, land surface temperature, cloud top temperature and cloud cover, aerosols, vegetation, atmospheric water vapour and

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/GGGW/BR8RVDC_index_0.html">http://www.esa.int/esaEO/GGGW/BR8RVDC_index_0.html</a>	Instrument: Not Operational		area with 80% cloud cover, Land surface temperature: 0.1 K  <b>Waveband Summary</b> VIS - SWIR: 0.65 µm, 0.85 µm, 1.27 µm, and 1.6 µm, SWIR-TIR: 1.6 µm, 3.7 µm, 11 µm and 12 µm, Microwave: 23.8 GHz, 36.5 GHz (bandwidth of 400 MHz)	liquid water content
O30	ERS-1 Radar Altimeter	Owner & Distributor ESA	Same as above	Mission: Completed Timeframe: Launch Date: Jul 1991 EOL Date: Mar 2000 Instrument: Not Operational	Radar altimeters	<b>Resolution Summary</b> Footprint is 16 - 20 km <b>Swath Summary Accuracy Summary</b> Wave height: 0.5 m or 10% (whichever is smaller) Sea surface elevation: better than 10 cm  <b>Waveband Summary</b> Microwave: Ku-band: 13.8 GHz	Measures wind speed, significant wave height, sea surface elevation, ice profile, land and ice topography, and sea ice boundaries
O31	ERS-2 Along Track Scanning Radiometer - 2	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/SEMG/WH2VQUD_index_0_m.html">http://www.esa.int/esaEO/SEMG/WH2VQUD_index_0_m.html</a>	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: NOT Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> IR ocean channels: 1 x 1 km, Microwave near-nadir viewing: 20 km instantaneous field of view  <b>Swath Summary Accuracy Summary</b> Sea surface temperature to <0.5 K over 0.5 x 0.5 deg (lat/long) area with 80% cloud cover, Land surface temperature: 0.1 K  <b>Waveband Summary</b> VIS - SWIR: 0.65 µm, 0.85 µm, 1.27 µm, and 1.6 µm, SWIR-TIR: 1.6 µm, 3.7 µm, 11 µm and 12 µm, Microwave: 23.8 GHz, 36.5 GHz (bandwidth of 400 MHz)	Measurements of sea surface temperature, land surface temperature, cloud top temperature and cloud cover, aerosols, vegetation, atmospheric water vapour and liquid water content
O32	ERS-2 Radar Altimeter	Owner & Distributor ESA	Same as above	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011	Radar altimeters	<b>Resolution Summary</b> Footprint is 16 - 20 km <b>Accuracy Summary</b> Wave height: 0.5 m or 10% (whichever is smaller) Sea surface elevation: better than 10 cm <b>Waveband Summary</b> Microwave: Ku-band: 13.8 GHz	Measures wind speed, significant wave height, sea surface elevation, ice profile, land and ice topography, and sea ice boundaries

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Instrument: Operational			
O33	ENVISAT Advanced Along-Track Scanning Radiometer	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://envisat.esa.int/">http://envisat.esa.int/</a>	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Imaging multi-spectral radiometers (vis/IR) and multiple direction/polarisation radiometers	<b>Resolution Summary</b> IR ocean channels: 1 x 1 km, Visible land channels: 1 x 1 km <b>Swath Summary</b> 500 km <b>Accuracy Summary</b> Sea surface temperature: <0.5 K over 0.5 x 0.5 deg (lat/long) area with 80% cloud cover Land surface temperature: 0.1 K (relative) <b>Waveband Summary</b> VIS - NIR: 0.555 µm, 0.659 µm, 0.865 µm, SWIR: 1.6 µm, MWIR: 3.7 µm, TIR: 10.85 µm, 12 µm	Measurements of sea surface temperature, land surface temperature, cloud top temperature, cloud cover, aerosols, vegetation, atmospheric water vapour and liquid water content
O34	ENVISAT Radar Altimeter - 2	Owner & Distributor ESA	Same as above	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Radar altimeters	<b>Resolution Summary Swath Summary Accuracy Summary</b> Altitude: better than 4.5 cm, Wave height: better than 5% or 0.25 m <b>Waveband Summary</b> Microwave: 13.575 GHz (Ku-Band) and 3.2 GHz (S-Band)	Measures wind speed, significant wave height, sea surface elevation, ice profile, land and ice topography, and sea ice boundaries
O35	Jason 1 JASON Microwave Radiometer	Owner & Distributor: NASA/CNES	Type: Inclined, non-sunsynchronous Altitude: 1336 km Period: 112.4 mins Inclination: 66 deg Repeat cycle: 10 days LST: Longitude (if geo): Asc/desc: N/A URL: <a href="http://sealevel.jpl.nasa.gov/mission/jason-1.html">http://sealevel.jpl.nasa.gov/mission/jason-1.html</a> <a href="http://smcsc.cnes.fr/JASON/">http://smcsc.cnes.fr/JASON/</a>	Mission: On-going Timeframe: Launch Date: 07 Dec 2001 Planned EOL Date: N.A. Instrument: Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 41.6 km at 18.7 GHz, 36.1 km at 23.8 GHz, 22.9 km at 34 GHz <b>Swath Summary</b> 120 deg cone centred on nadir <b>Accuracy Summary</b> Total water vapour: 0.2 g/sq cm, Brightness temperature: 0.15 K <b>Waveband Summary</b> Microwave: 18.7 GHz, 23.8 GHz, 34 GHz	Measurement of brightness temperature to retrieve total water vapour. Altimeter data to correct for errors caused by water vapour and cloud-cover.
O36	Jason 1 Laser	Owner & Distributor:	Same as above	Mission: On-going	Precision orbit	<b>Resolution Summary Accuracy Summary</b> 2 cm overhead	Baseline tracking data for

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Retroreflector Array	NASA/CNES		Timeframe: Launch Date: 07 Dec 2001 Planned EOL Date: N.A. Instrument: Operational		ranging	precision orbit determination and/or geodesy. Also for calibration of radar altimeter bias. Several types used on various missions. (ASI involved in LAGEOS 2 development)
O37	Jason 1 Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator	Owner& Distributor: NASA/CNES	Same as above	Mission: On-going Timeframe: Launch Date: 07 Dec 2001 Planned EOL Date: N.A. Instrument: Operational	Radar altimeters	<b>Resolution Summary</b> Basic measurement: 1/sec (6 km along track), Raw measurement: 10/sec (600 m along track) <b>Swath Summary</b> On baseline TOPEX/POSEIDON orbit (10 day cycle): 300 km between tracks at equator <b>Accuracy Summary</b> Sea level: 3.9 cm, Significant waveheight: 0.5 m, Horizontal sea surface wind speed: 2 m/s <b>Waveband Summary</b> Microwave: Ku-band (13.575 GHz), C-band (5.3 GHz)	Nadir viewing sounding radar for provision of real-time high precision sea surface topography, ocean circulation and wave height data
O38	Jason 2 JASON Microwave Radiometer	Owner& Distributor: NASA /CNES	Type: Inclined, non-sunsynchronous Altitude: 1336 km Period: 112.4 mins Inclination: 66 deg Repeat cycle: 10 days LST: Longitude (if geo): Asc/desc: N/A URL: <a href="http://sealevel.jpl.nasa.gov/mission/jason-2.html">http://sealevel.jpl.nasa.gov/mission/jason-2.html</a> <a href="http://smc.cnes.fr/JASON/">http://smc.cnes.fr/JASON/</a>	Mission: On-going Timeframe: Launch Date: June 08 Planned EOL Date: N.A. Instrument: Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 41.6 km at 18.7 GHz, 36.1 km at 23.8 GHz, 22.9 km at 34 GHz <b>Swath Summary</b> 120 deg cone centred on nadir <b>Accuracy Summary</b> Total water vapour: 0.2 g/sq cm, Brightness temperature: 0.15 K <b>Waveband Summary</b> Microwave: 18.7 GHz, 23.8 GHz, 34 GHz MW (~1.0 cm - ~100 cm)	Measurement of brightness temperature to retrieve total water vapour. Altimeter data to correct for errors caused by water vapour and cloud-cover.
O39	Jason 2 Laser Retroreflector Array	Owner& Distributor: NASA/CNES	Same as above	Mission: On-going Timeframe:	Precision orbit	<b>Resolution Summary</b> <b>Accuracy Summary</b> 2 cm overhead ranging <b>Waveband Summary</b>	Baseline tracking data for precision orbit determination and/or geodesy. Also for calibration of radar altimeter

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Launch Date: June 08 Planned EOL Date: N.A. Instrument: Operational			bias. Several types used on various missions. (ASI involved in LAGEOS 2 development)
O40	Jason 2 Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator	Owner& Distributor: NASA/CNES  Agreement with EUMETSAT	Same as above	Mission: On-going Timeframe: Launch Date: June 08 Planned EOL Date: N.A. Instrument: Operational	Radar altimeters	<b>Resolution Summary</b> Basic measurement: 1/sec (6 km along track), Raw measurement: 10/sec (600 m along track) <b>Swath Summary</b> On baseline TOPEX/POSEIDON orbit (10 day cycle): 300 km between tracks at equator <b>Accuracy Summary</b> Sea level: 3.9 cm, Significant waveheight: 0.5 m, Horizontal sea surface wind speed: 2 m/s <b>Waveband Summary</b> Microwave: Ku-band (13.575 GHz), C-band (5.3 GHz) MW (~1.0 cm - ~100 cm)	Nadir viewing sounding radar for provision of real-time high precision sea surface topography, ocean circulation and wave height data
O41	Jason – 3 Future Jason Payload	Owner& Distributor: NOAA CNES EUMESAT	N.A.	Mission: Future Timeframe Planned Launch Date: 30 Jun 2013 Planned EOL Date: N.A. Instrument: Not Operational	Radar altimeters	<b>Waveband Summary</b> Microwave	Nadir viewing sounding radar for provision of real-time high precision sea surface topography, ocean circulation and wave height data
O42	Jason - CS Future Jason Payload	Owner& Distributor: ESA EUMESAT EC	N.A.	Mission: Future Timeframe: Planned Launch Date: 31 Dec 2016 Planned EOL Date: N.A. Instrument: Not Operational	Radar altimeters	<b>Waveband Summary</b> Microwave	Nadir viewing sounding radar for provision of real-time high precision sea surface topography, ocean circulation and wave height data

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O43	Terra MODIS	Owner: NASA  Agreement with ESA	Sun Synchronous orbit Orbital elements Eccentricity 0 Inclination 98.2° Orbital period 98.1 minutes Apoapsis 685 km (426 mi) Periapsis 654 km (406 mi)	Mission : Ongoing Launch Date: February 24, 2000 Planned EOL Date: February 24, 2015  Instrument Operational	Imaging multi-spectral radiometers (vis/IR)	Swath: 2330 Km  Bands: 36 channels  Res: 1 Km  It has a viewing swath width of 2,330 km and views the entire surface of the Earth every one to two days. Its detectors measure 36 spectral bands between 0.405 and 14.385 µm, and it acquires data at three spatial resolutions -- 250m, 500m, and 1,000m.	MODIS Level 1 data, geolocation, cloud mask, and Atmosphere products: <a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a> MODIS land products: <a href="http://edcdaac.usgs.gov/dataproducts.asp">http://edcdaac.usgs.gov/dataproducts.asp</a> MODIS cryosphere products: <a href="http://nsidc.org/daac/modis/index.html">http://nsidc.org/daac/modis/index.html</a>  MODIS ocean color and sea surface temperature products: <a href="http://oceancolor.gsfc.nasa.gov/">http://oceancolor.gsfc.nasa.gov/</a>
O44	Aqua MODIS	Owner: NASA  Agreement with ESA	Orbital elements Regime LEO Longitude N/A Semimajor axis 7077.75 km Eccentricity 0.001203 Inclination 98.14° Orbital period 98.4 minutes Apoapsis 708 km (440 mi) Periapsis 691 km (429 mi) Orbits per day 14.5625	Mission : Ongoing Launch date May 4, 2002 Planned EOL date: N.A.  Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	Swath: 2330 Km  Bands: 36 channels  Res: 1 Km  It has a viewing swath width of 2,330 km and views the entire surface of the Earth every one to two days. Its detectors measure 36 spectral bands between 0.405 and 14.385 µm, and it acquires data at three spatial resolutions -- 250m, 500m, and 1,000m.	MODIS Level 1 data, geolocation, cloud mask, and Atmosphere products: <a href="http://ladsweb.nascom.nasa.gov/">http://ladsweb.nascom.nasa.gov/</a> MODIS land products: <a href="http://edcdaac.usgs.gov/dataproducts.asp">http://edcdaac.usgs.gov/dataproducts.asp</a> MODIS cryosphere products: <a href="http://nsidc.org/daac/modis/index.html">http://nsidc.org/daac/modis/index.html</a>  MODIS ocean color and sea surface temperature products: <a href="http://oceancolor.gsfc.nasa.gov/">http://oceancolor.gsfc.nasa.gov/</a>
O45	SPOT – 4 Vegetation	Owner & Distributor  CNES & Spotimage	Type: Sun-synchronous Altitude: 832 km Period: 101 mins Inclination: 98.7 deg Repeat cycle: 26 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.spotimage.com/">http://www.spotimage.com/</a>	Mission: On-going  Timeframe :  Launch Date: 24 Mar 1998  Planned EOL Date: N.A.  Instrument : Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1.15 km at nadir - minimal variation for off-nadir viewing <b>Swath Summary</b> 2200 km <b>Waveband Summary</b> Operational mode: VIS: 0.61 - 0.68 µm, NIR: 0.78 - 0.89 µm, SWIR: 1.58 - 1.75 µm, <b>Blue:</b> 0.43 - 0.47 µm	Data of use for crop forecast and monitoring, vegetation monitoring, and biosphere/ geosphere interaction studies

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			<a href="http://smsc.cnes.fr/VEGETATION/">http://smsc.cnes.fr/VEGETATION /</a>				
O46	SPOT – 5 Vegetation	Owner & Distributor CNES & Spotimage	Same as SPOT-4	Mission: On-going Timeframe : Launch Date: 04 May 2002 Planned EOL Date: N.A. Instrument : Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1.15 km at nadir - minimal variation for off-nadir viewing <b>Swath Summary</b> 2200 km <b>Waveband Summary</b> Operational mode: VIS: 0.61 - 0.68 µm, NIR: 0.78 - 0.89 µm, SWIR: 1.58 - 1.75 µm, Blue: 0.43 - 0.47 µm	Data of use for crop forecast and monitoring, vegetation monitoring, and biosphere/geosphere interaction studies
O47	Orbview-2 SeaWifs	Owner: GeoEye Agreement with ESA	Orbit: Sun-synchronous polar circular orbit, altitude = 705 km, inclination =98.2°, equator crossing time at local noon (12:00 hours on descending node), successive orbit equatorial crossing longitude = -24.721°, period = 98.2 minutes, orbital repeat time = 16 days (233 orbits)	Mission: On-going Timeframe : Launch Date: 1 Aug 1997 Planned EOL Date: N.A. Instrument : Operational	Sea-Viewing Wide Field-of-View Sensor	Swath: 1200/2800 KM 8 Bands	Application: Ocean-color data, ocean biology and ecology, phytoplankton concentrations and growth, pollution, algae blooms, etc. The data may help scientists to understand the role of ocean plant life in the Earth's carbon cycle.
O48	QuickSCAT	Owner: NASA Agreement with ESA	Sun synchronous low earth orbit Semimajor Axis 7180.8 km Eccentricity 0.00014 Inclination 98.6 degrees Orbital Period 100.93 minutes Right ascension of the ascending node 178.47 degrees Argument of perigee 47.4 degrees	Mission: Completed Timeframe: Launch Date: June 19, 1999 EOL Date: 29 November 2009 Instrument: Not Operational	Quick Scatterometer	Radar: 13.4 gigahertz; 110-watt pulse at 189-hertz pulse repetition frequency (PRF)  Antenna: 1-meter-diameter rotating dish that produces two spot beams, sweeping in a circular pattern	microwave radar that measures near-surface wind speed and direction
O49	BIRD Hot Spot Recognition System	Owner & Distributor DLR	Type: Sun-synchronous Altitude: 572 km Period: Inclination: 97.8 deg Repeat cycle: LST: 10:30	Mission: Completed Timeframe: 22 Oct 2001 - 31 Dec 2005 Instrument: Not	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 370 m <b>Swath Summary</b> 190 km <b>Waveband Summary</b> MWIR: 3.4 - 4.2 µm, TIR: 8.4 - 9.3 µm	Hot spot Detection (vegetation fires, volcanic activities, burning oil wells or coal seams)

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			Longitude (if geo): Asc/desc: Descending URL: <a href="http://spacesensors.dlr.de/SE/bird/">http://spacesensors.dlr.de/SE/bird/</a>	Operational			
O50	BIRD Wide-Angle Optoelectronic Stereo Scanner	Owner & Distributor  DLR	Type: Sun-synchronous Altitude: 572 km Period: Inclination: 97.8 deg Repeat cycle: LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://spacesensors.dlr.de/SE/bird/">http://spacesensors.dlr.de/SE/bird/</a>	Mission: Completed  Timeframe: 22 Oct 2001 - 31 Dec 2005  Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 185 m <b>Swath Summary</b> 533 km <b>Waveband Summary</b> VIS: 600 - 670nm, NIR: 840 - 900 nm	Vegetation and Cloud coverage
O51	Sentinel – 3a Ocean and Land Colour Imager	Owner & Distributor  ESA	Type: Sun-synchronous Altitude: 814 km Period: 100 mins Inclination: 98.65 deg Repeat cycle: 27 days LST: 10:00 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaLP/LPgmes.html">http://www.esa.int/esaLP/LPgmes.html</a>	Mission: Future  Timeframe :  Planned Launch Date: 01 Oct 2012  Planned EOL Date: 01 Oct 2019  Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 300 m <i>[Best Resolution: 300m]</i> <b>Swath Summary</b> 1270 km, across-track tilt 12.2 deg to the West <i>[Max Swath: 1270 km]</i> <b>Accuracy Summary</b> 2% abs, 0.1% rel. <b>Waveband Summary</b> 21 bands in VNIR/SWIR	Marine and land services
O52	Sentinel – 3a Sea and Land Surface Temperature Radiometer	Owner & Distributor  ESA	Same as above	Mission: Future  Timeframe :  Planned Launch Date: 01 Oct 2012  Planned EOL Date: 01 Oct 2019  Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 500 m (VNIR/SWIR), 1 km (TIR) <i>[Best Resolution: 500m]</i> <b>Swath Summary</b> 1675 km (near-nadir view), 750km (backward view) <i>[Max Swath: 1675 km]</i> <b>Accuracy Summary</b> 0.2 K abs., 80 mK rel. <b>Waveband Summary</b> 9 bands in VNIR/SWIR/TIR	Marine and land services
O53	Sentinel – 3a SAR Radar	Owner &	Same as above	Mission: Future	Radar altimeters	<b>Resolution Summary</b> 300 m <i>[Best Resolution: 300m]</i>	Marine and land services

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Altimeter	Distributor ESA		Timeframe : Planned Launch Date: 01 Oct 2012 Planned EOL Date: 01 Oct 2019 Instrument: Not Operational		<b>Swath Summary</b> Profiling Accuracy Summary 3 cm in range (1 s average, 2 m SWH including atm. corrections) <b>Waveband Summary</b> Dual freq radar altimeter, Ku-band, C-band	
O54	Sentinel – 3b Ocean and Land Colour Imager	Owner & Distributor ESA	Same as above	Mission: Future Timeframe : Planned Launch Date: 01 Oct 2015 Planned EOL Date: 01 Oct 2022 Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 300 m [Best Resolution: 300m] <b>Swath Summary</b> 1270 km, across-track tilt 12.2 deg to the West [Max Swath: 1270 km] <b>Accuracy Summary</b> 2% abs, 0.1% rel. <b>Waveband Summary</b> 21 bands in VNIR/SWIR	Marine and land services
O55	Sentinel – 3b Sea and Land Surface Temperature Radiometer	Owner & Distributor ESA	Same as above	Mission: Future Timeframe : Planned Launch Date: 01 Oct 2015 Planned EOL Date: 01 Oct 2022 Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 500 m (VNIR/SWIR), 1 km (TIR) [Best Resolution: 500m] <b>Swath Summary</b> 1675 km (near-nadir view), 750km (backward view) [Max Swath: 1675 km] <b>Accuracy Summary</b> 0.2 K abs., 80 mK rel. <b>Waveband Summary</b> 9 bands in VNIR/SWIR/TIR	Marine and land services
O56	Sentinel – 3b SAR Radar Altimeter	Owner & Distributor ESA	Same as above	Mission: Future Timeframe : Planned Launch Date: 01 Oct 2015 Planned EOL Date: 01 Oct 2022	Radar altimeters	<b>Resolution Summary</b> 300 m [Best Resolution: 300m] <b>Swath Summary</b> Profiling Accuracy Summary 3 cm in range (1 s average, 2 m SWH including atm. corrections) <b>Waveband Summary</b> Dual freq radar altimeter, Ku-band, C-band	Marine and land services

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Instrument: Not Operational			
O57	SARAL AltiKa Ka-band Altimeter	Owner & Distributor CNES	Type: Sun-synchronous Altitude: 799 km Period: 100.59 mins Inclination: 98.55 deg Repeat cycle: 35 days LST: Longitude (if geo): Asc/desc: Descending URL: Not Available	Mission: Future Timeframe: Planned Launch Date: 01 Sep 2010 Planned EOL Date: N.A. Instrument : Not Operational	Radar altimeters	A high resolution Ka-band altimeter dedicated to sea level, ocean wave height and wind speed measurement <b>Waveband Summary</b> 35.5 - 36 GHz	Sea surface height
O58	Oceansat – 2 Ocean Colour Monitor	Owner: ISRO Distributor: Agreement with ASI	Type: Sun-synchronous Altitude: 720 km Period: 99.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.isro.org/">http://www.isro.org/</a>	Mission: On-going Timeframe: Launch Date: 24 Sep 2009 Planned EOL Date: 24 Sep 2013 Instrument: Operational	Ocean colour instruments	<b>Resolution Summary</b> 236 x 360m [Best Resolution: 236m] <b>Swath Summary</b> 1440 km [Max Swath: 1440 km] <b>Waveband Summary</b> VIS - NIR: 0.40 - 0.88 µm (8 channels)	Ocean colour data, Estimation of phytoplankton concentration, identification of potential fishing zones, assessment of primary productivity
O59	Oceansat – 2 Scatterometer	Owner: ISRO Distributor: Agreement with ASI	Same as above	Mission: On-going Timeframe: Launch Date: 24 Sep 2009 Planned EOL Date: 24 Sep 2013 Instrument: Operational	Scatterometers	<b>Resolution Summary</b> 50 km <b>Swath Summary</b> 1400 - 1840 km <b>Waveband Summary</b> 13.515 GHz MW	Ocean surface wind measurements
O60	Oceansat – 3 Ku-band Altimeter	Owner: ISRO Distributor: Agreement with ASI	Type: Sun-synchronous Altitude: 720 km Period: 99.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.isro.org/">http://www.isro.org/</a>	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2011 Planned EOL Date: 01 Jan 2015 Instrument: Not	Radar altimeters	<b>Resolution Summary</b> 1 km <b>Swath Summary</b> 1500 m <b>Waveband Summary</b> 1306 GHz	Mainly sea state applications including SWH, Geoid etc., establishment of global databases.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Operational			
O61	Oceansat – 3 Ocean Colour Monitor	Owner: ISRO Distributor: Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2011 Planned EOL Date: 01 Jan 2015 Instrument: Not Operational	Ocean colour instruments	<b>Waveband Summary</b> 12 channel	Ocean colour data, Estimation of phytoplankton concentration, identification of potential fishing zones, assessment of primary productivity
O62	Oceansat – 3 Passive Microwave Radiometer	Owner: ISRO Distributor: Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2011 Planned EOL Date: 01 Jan 2015 Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 20 km, 17 km, 10 km <b>Swath Summary</b> 1500 km <b>Waveband Summary</b> 18 GHz, 21 GHz, 37 GHz	Mainly for ocean biology and sea state applications including SWH, geoid etc., establishment of global databases, meteorological applications
O63	Oceansat – 3 Scatterometers	Owner: ISRO Distributor: Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2011 Planned EOL Date: 01 Jan 2015 Instrument: Not Operational	Scatterometers	<b>Resolution Summary</b> 50 km <b>Swath Summary</b> 1400 - 1840 km <b>Waveband Summary</b> 13.515 GHz	Ocean surface wind measurements
O64	Oceansat - 3 Thermal Infrared Radiometer	Owner: ISRO Distributor: Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: 01 Jan 2011	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1 km <b>Swath Summary</b> 1500 km <b>Waveband Summary</b> 5 bands	TIR and OCM combination will support joint analysis for Operational potential fishing zones.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Planned EOL Date: 01 Jan 2015  Instrument: Not Operational			
O65	IRS-P3 Modular Opto-electronic Scanner	Owner: ISRO  Agreement with ESA and DLR	Type: Sun-synchronous Altitude: 817 km Period: 101.35 mins Inclination: 98.7 deg Repeat cycle: 24 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.isro.org/">http://www.isro.org/</a>	Mission: completed  Timeframe: 21 Mar 1996 – Jan 2006  Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 1570 m, 525 m, 645 m <b>Swath Summary</b> 200 km (approximately) <b>Accuracy Summary</b> Radiometric:<1% <b>Waveband Summary</b> NIR: 755 - 768 nm (4 bands), VIS - NIR: 408 - 1010 nm (13 bands), SWIR: 1600 nm	Data for spectral analysis of O2 absorption in the NIR band, vegetation indices, and vegetation condition and soil assessment
O66	Poseidon Topex NASA Radar Altimeter	Owner & Distributor CNES/NASA	Type: Inclined, non-sunsynchronous Altitude: 1336 km Period: 112.4 mins Inclination: 66 deg Repeat cycle: 10 days LST: Longitude (if geo): Asc/desc: N/A URL: <a href="http://topex-www.jpl.nasa.gov/mission/topex.html">http://topex-www.jpl.nasa.gov/mission/topex.html</a>	Mission: Completed  Timeframe: Launch Date: 10 Aug 1992 EOL Date: 5 Jan 2006  Instrument : Not Operational	Radar altimeters	<b>Swath Summary</b> 6 km <b>Accuracy Summary</b> 2.4 cm <b>Waveband Summary</b> Microwave: 126 GHz and 5.3	Measurement of global ocean surface topography
O67	Poseidon Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator	Owner & Distributor CNES/NASA	Same as above	Mission: Completed  Timeframe: Launch Date: 10 Aug 1992 EOL Date: 5 Jan 2006  Instrument : Not Operational	Radar altimeters	<b>Resolution Summary</b> Typical: 5 - 11 km <b>Waveband Summary</b> KU-Band (13.575 GHz)	Nadir viewing sounding radar for provision of real-time high precision sea surface topography, ocean circulation and wave height data
O68	Nimbus-7 CZCS	Owner: NASA  Agreement with ESA	Sun-synchronous orbit at an altitude of 955 km. Equatorial crossings are local noon for ascending node and local midnight	Mission: Completed  Timeframe: Launch Date: 25 October	Coastal Zone Color Scanner	Swath: 1556 Km Bands: 6	Observe ocean color, temperature, and ice conditions, particularly in coastal zones, with sufficient

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
			for descending node. Spacecraft inclination is 99.1 degrees, with a leeward latitude of 80.77 degrees. Orbital period is 104.15 minutes, and consecutive equator crossings are separated by 26.1 degrees longitude. URL: <a href="http://jwocky.gsfc.nasa.gov/n7tom/s/nimbus7tech.html">http://jwocky.gsfc.nasa.gov/n7tom/s/nimbus7tech.html</a>	1978 EOL Date: 1 June 1994 Instrument: Not Operational		Res: 825 m	spatial and spectral resolution to determine the feasibility of applications such as: detecting pollutants in the upper level of the oceans; determining the nature of materials suspended in the water
O69	Adeos - 1  POLarization and Directionality of the Earth's Reflectances	Owner: CNES/NASDA  Distributor: CNES	Type: Sun-synchronous Altitude: 797 km Period: 100.92 mins Inclination: 98.59 deg Repeat cycle: 41 days LST: 10:50 Longitude (if geo): Asc/desc: Descending URL : <a href="http://www.jaxa.jp/projects/sat/adeos/index_e.html">http://www.jaxa.jp/projects/sat/adeos/index_e.html</a> <a href="http://smc.cnes.fr/POLDER/">http://smc.cnes.fr/POLDER/</a>	Mission: Completed Timeframe: Launch Date: 17 Aug 1996 Planned EOL Date: 30 Jun 1997 Instrument: Not Operational	Multiple direction/polarisation radiometers	<b>Resolution Summary</b> 6 x 7 km <b>Swath Summary</b> 2400 (across track) x 1800 km (along track) <b>Accuracy Summary</b> Radiation budget, land surface, Reflectance: 2% <b>Waveband Summary</b> VIS - NIR: 0.443 µm, 0.670 µm and 0.865 µm at 3 polarisations, and 0.443 µm, 0.49 µm, 0.565 µm, 0.763 µm, 0.765 µm and 0.91 µm with no polarisation	Measures polarization, and directional and spectral characteristics of the solar light reflected by aerosols, clouds, oceans and land surfaces
O70	ADEOS – 2 POLarization and Directionality of the Earth's Reflectances	Owner: CNES/NASDA  Distributor: CNES	Type: Sun-synchronous Altitude: 803 km Period: 101 mins Inclination: 98.6 deg Repeat cycle: 4 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.jaxa.jp/projects/sat/adeos/index_e.html">http://www.jaxa.jp/projects/sat/adeos/index_e.html</a> <a href="http://smc.cnes.fr/POLDER/">http://smc.cnes.fr/POLDER/</a>	Mission: Completed Timeframe: Launch Date: 01 Nov 2002 EOL Date: 24 Oct 2003 Instrument: Not Operational	Multiple direction/polarisation radiometers	<b>Resolution Summary</b> 6 x 7 km <b>Swath Summary</b> 2400 (across track) x 1800 km (along track) <b>Accuracy Summary</b> Radiation budget, land surface, Reflectance: 2% <b>Waveband Summary</b> VIS - NIR: 0.443 µm, 0.670 µm and 0.865 µm at 3 polarisations; and 0.443 µm, 0.49 µm, 0.565 µm, 0.763 µm, 0.765 µm and 0.91 µm with no polarisation	Measures polarization, and directional and spectral characteristics of the solar light reflected by aerosols, clouds, oceans and land surfaces

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O71	Cryosat-2 SAR Interferometer Radar Altimeter	Owner & Distributor ESA	Type: Inclined, non-sunsynchronous Altitude: 717 km Period: 100 mins Inclination: 92 deg Repeat cycle: 369 days LST: 0.25 degree nodal regression per day Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LPcryosat.html">http://www.esa.int/esaLP/LPcryosat.html</a>	Mission: Ongoing Timeframe: Launch Date: 8 Apr 2010 EOL Date: 8 Apr 2013 Instrument: Operational	Radar altimeters	<b>Resolution Summary</b> Range resolution 45 cm, along-track resolution 250 m <b>Swath Summary</b> Footprint 15 km <b>Accuracy Summary</b> Arctic sea-ice: 1.6cm/year for 300kmx300km cells, Land ice (small scale): 3.3 cm/year for 100 x 100 km cells, Land ice (large scale): 0.17 cm/year for Antarctica size area <b>Waveband Summary</b> Microwave: 13.575 GHz (Ku-Band)	Marine ice and terrestrial ice sheet thickness measurement
O72	SAC-D Aquarius L-Band Scatterometer	Owner: CONAE  Agreement with ASI	Type: Sun-synchronous Altitude: 657 km Period: 98 mins Inclination: 98 deg Repeat cycle: 9 days LST: 10:15 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.conae.gov.ar/">http://www.conae.gov.ar/</a>	Mission: Future Timeframe: Planned Launch Date: April 2011 Planned EOL Date: April 2016 Instrument: Not Operational	Scatterometers	<b>Resolution Summary</b> 100 km <b>Swath Summary</b> 300 km <b>Accuracy Summary</b> 0.2 psu <b>Waveband Summary</b> L-Band (1.2 GHz)	L-band scatterometer to provide roughness correction to brightness temperature
O73	SAC-D High Sensitivity Camera	Owner: CONAE  Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: April 2011 Planned EOL Date: April 2016 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 200 - 300 m [Best Resolution: 200m] <b>Swath Summary</b> Min 700 km [Max Swath: 700 km] <b>Waveband Summary</b> PAN (VIR-NIR): 450 - 900 nm	High Sensitivity Camera (HSC) measures top of atmosphere radiance in the VIS & NIR spectral range measured by a high sensitivity sensor detects: urban lights, electric storms, polar regions, snow cover, forest fires

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O74	SAC-D Aquarius L-Band Radiometer	Owner: CONAE  Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: April 2011 Planned EOL Date: April 2016  Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 100 km <b>Swath Summary</b> 300 km <b>Accuracy Summary</b> 0.2 psu <b>Waveband Summary</b> L-band (1.4 GHz)	L-band passive microwave radiometer measures brightness temperature of ocean to retrieve salinity
O75	SAC – D Microwave Radiometer	Owner: CONAE  Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: April 2011 Planned EOL Date: April 2016  Instrument: Not Operational	Multiple direction/polarisation radiometers	<b>Resolution Summary</b> < 47 km <b>Swath Summary</b> 380 km <b>Accuracy Summary</b> .1 K <b>Waveband Summary</b> (K Band) 23.8 GHz V Pol and 36.5 GHz H and V Pol Eight beams per frequency	Precipitation rate, wind speed, sea ice concentration, water vapour, clouds
O76	SAC- D New Infrared Scanner Technology	Owner: CONAE  Agreement with ASI	Same as above	Mission: Future Timeframe: Planned Launch Date: April 2011 Planned EOL Date: April 2016  Instrument: Not Operational	Other - Infrared Scanner Technology	<b>Resolution Summary</b> Space resol: 350 m; less burned area detectable: 200 sqm <i>[Best Resolution: 350m]</i> <b>Swath Summary</b> Instant: 182 km; Extended: 1000 km <i>[Max Swath: 1000 km]</i> <b>Accuracy Summary</b> 0.5 °C <b>Waveband Summary</b> Infrared push-broom scanner based on 2 linear uncooled microbolometric arrays sensitive to Mid-Wave Infra-Red (3.8 µm) and Long-Wave Infra-Red (10.85 and 11.85 µm) spectral bands respectively	NIRST detects hot spots and High Temperature Events (HTE), caused by biomass fires, volcanic eruptions, and other phenomena in order to measure their temperatures, and their released energy over land (fires & volcanic events). Supplementary measurements of sea surface temperatures (SST) off the coasts of South America and other targets of opportunity with 180 km swath, overlapping the Aquarius inner beams

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
O77	SAOCOM 1A, TIR Camera	Owner: CONAE  Agreement with ASI	Type: Sun-synchronous Altitude: 620 km Period: 97.2 mins Inclination: 97.89 deg Repeat cycle: 16 days LST: 6:12 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.conae.gov.ar/">http://www.conae.gov.ar/</a>	Mission: Future  Timeframe:  Planned Launch Date: 01 Jun 2012  Planned EOL Date: 01 Jun 2017  Instrument Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 200 m	Fires monitoring

### *4.2 Medium resolution Land and Ocean monitoring (wide swath ocean colour and surface temperature sensors, altimeter). Table 2*

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
O1	METOP-A Advanced Microwave Sounding Unit-A (AMSU-A)	EUMETSAT: global	Mar 2008 – to date	EUMETSAT Darmstadt Volume: 0.1 TB / year	Level 0: EPS native Level 1: EPS native* *(plus other formats on retrieval, e.g. HDF5, BUFR)	Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT Helpdesk: <a href="mailto:ops@eumetsat.int">ops@eumetsat.int</a> H. Rothfuss
O2	METOP-A Advanced Scatterometer (ASCAT)	EUMETSAT: global	EUMETSAT: Mar 2008 – to date	EUMETSAT Darmstadt Volume: 1.5 TB / year	Level 0: EPS native Level 1: EPS native* Level 2: EPS native* * Various resolutions and products plus other formats on retrieval, e.g. HDF5)	Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT Helpdesk: <a href="mailto:ops@eumetsat.int">ops@eumetsat.int</a> H. Rothfuss
O3	METOP-A Advanced Very High Resolution Radiometer/3 (AVHRR)	EUMETSAT: global	EUMETSAT: Mar 2008 – to date	EUMETSAT Darmstadt Volume: 0.45 TB / year	Level 0: EPS native Level 1: EPS native* * Global Data Set, 1 km plus other formats on retrieval, e.g. HDF5)	Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT Helpdesk: <a href="mailto:ops@eumetsat.int">ops@eumetsat.int</a> H. Rothfuss
O4	METOP-A High Resolution Infra-red Sounder/4	EUMETSAT: global	EUMETSAT: Mar 2008 – to date	EUMETSAT Darmstadt Volume: 0.1 / year	Level 0: EPS native Level 1: EPS native* * plus other formats on retrieval, e.g. HDF5, BUFR)	Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT Helpdesk: <a href="mailto:ops@eumetsat.int">ops@eumetsat.int</a> H. Rothfuss
O5	METOP-A Atmospheric Interferometer	EUMETSAT: global	EUMETSAT: Mar 2008 – to date	EUMETSAT Darmstadt Volume: 9.6 TB / year	Level 0: EPS native Level 1: EPS native*	Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering:	EUMETSAT Helpdesk: <a href="mailto:ops@eumetsat.int">ops@eumetsat.int</a>

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
					* various levels plus other formats on retrieval, e.g. HDF5, BUFR)	<a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	H. Rothfuss
O6	METOP-B Advanced Microwave Sounding Unit-A	TBD	TBD	TBD	TBD	TBD	TBD
O7	METOP-B Advanced Scatterometer	TBD	TBD	TBD	TBD	TBD	TBD
O8	METOP-B Advanced Very High Resolution Radiometer/3	TBD	TBD	TBD	TBD	TBD	TBD
O9	METOP-B High Resolution Infra-red Sounder/4	TBD	TBD	TBD	TBD	TBD	TBD
O10	METOP-B Infrared Atmospheric Sounding Interferometer	TBD	TBD	TBD	TBD	TBD	TBD
O11	METOP-C Advanced Microwave Sounding Unit-A	TBD	TBD	TBD	TBD	TBD	TBD
O12	METOP-C Advanced Scatterometer	TBD	TBD	TBD	TBD	TBD	TBD
O13	METOP-C Advanced Very High Resolution Radiometer/3	TBD	TBD	TBD	TBD	TBD	TBD
O14	METOP-C High Resolution Infra-red Sounder/4	TBD	TBD	TBD	TBD	TBD	TBD
O15	METOP-C Infrared Atmospheric Sounding Interferometer	TBD	TBD	TBD	TBD	TBD	TBD
O16	NOAA-7	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 -	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas	ESA: Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA: <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			to date ESRIN: 1982 - 1997	Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series			
O17	NOAA-8	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 - to date ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O18	NOAA – 9 Advanced Very High Resolution Radiometer/2	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 - to date ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O19	NOAA – 10 Advanced Very High Resolution Radiometer/2	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 -	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/coli.html">http://catalogues.eoportal.org/coli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			to date ESRIN: 1982 - 1997	ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series			
O20	NOAA – 11 Advanced Very High Resolution Radiometer/2	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 - to date ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA: Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O21	NOAA – 12 Advanced Very High Resolution Radiometer/2	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 - to date ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA: Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O22	NOAA – 14 Advanced Very High Resolution Radiometer/2	ESA: European Coverage, North Africa	All NOAA Series: ESA Tromso: 1988 - to date Matera: Dec 2000 – to date Maspalomas: Apr 1986 -	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas	ESA: Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			to date ESRIN: 1982 - 1997	Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series			
O23	NOAA – 15 Advanced Very High Resolution Radiometer/3	ESA: European Coverage, North Africa	All NOAA Series: ESA  Tromso: 1988 - to date Matera: Dec 2000 – to date  Maspalomas: Apr 1986 - to date  ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O24	NOAA – 16 Advanced Very High Resolution Radiometer/3	ESA: European Coverage, North Africa	All NOAA Series: ESA  Tromso: 1988 - to date Matera: Dec 2000 – to date  Maspalomas: Apr 1986 - to date  ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O25	NOAA – 17 Advanced Very High Resolution Radiometer/3	ESA: European Coverage, North Africa	All NOAA Series: ESA  Tromso: 1988 - to date Matera: Dec 2000 – to date  Maspalomas: Apr 1986 -	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			to date ESRIN: 1982 - 1997	NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series			
O26	NOAA – 18  Advanced Very High Resolution Radiometer/3	ESA:  European Coverage, North Africa	All NOAA Series: ESA  Tromso: 1988 - to date Matera: Dec 2000 – to date  Maspalomas: Apr 1986 - to date ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O27	NOAA – 19  Advanced Very High Resolution Radiometer/3	ESA:  European Coverage, North Africa	All NOAA Series: ESA  Tromso: 1988 - to date Matera: Dec 2000 – to date  Maspalomas: Apr 1986 - to date ESRIN: 1982 - 1997	ESA: KSAT Tromso Volume: 6.8 TB for all NOAA series  ESA: ASI Matera Volume: 0.8 TB for all NOAA series  ESA: INSA Maspalomas Volume: 2.64 TB for all NOAA series  ESA ESRIN Frascati Volume: 1 TB NOAA Series	ESA:  Level 1b: SHARP (Standard-family HRPT Archive Request Product)	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O28	ENVISAT MERIS	ESA:  Worldwide coverage	ESA Infoterra: May 2002 – to date Matera: May 2002 – to date Maspalomas: May 2002 – to date ESRIN: May 2002 – to	ESA: Infoterra Farnborough Volume: 100 TB  ESA: ASI Matera Volume 83 TB  ESA: INTA Maspalomas Volume: 78 TB  ESA ESRIN Frascati	ESA: Level 0: Level 1: (ESRIN) Level 2: (ESRIN)  Envisat Format	ESA: MERIS RR: <a href="http://merci-srv.eo.esa.int/merci/welcome.do">http://merci-srv.eo.esa.int/merci/welcome.do</a>  MERIS: <a href="https://oa-ip.eo.esa.int/ra/">https://oa-ip.eo.esa.int/ra/</a>  MERIS and AATSR: <a href="https://oa-es.eo.esa.int/ra/">https://oa-es.eo.esa.int/ra/</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
			date Kiruna: Jun 2002 – to date	Volume: 42 TB (MERC1) ESA: Kiruna Salmijarvi Volume: 118 TB		<a href="https://oa-ks.eo.esa.int/ra/">https://oa-ks.eo.esa.int/ra/</a>	
O29	ERS-1 Along Track Scanning Radiometer	ESA: Worldwide coverage	ESA Brest: Aug 1991 – Jun 1996 Infoterra Farnborough: Aug 1991 – Dec 1997	ESA: Ifremer Brest Volume: TBD ESA: Infoterra Farnborough Volume: MERCI ATSR1 - 5.5 TB	ESA: Level 0: RASR Calibrated Files Level 1: ENVISAT Level 2:	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O30	ERS-1 Radar Altimeter	ESA: Worldwide coverage	ESA Brest: Aug 1991 – Jun 1996 Infoterra Farnborough: TBD	ESA: Ifremer Brest Volume: 4.5 TB ESA: Infoterra Farnborough Volume: TBD	Level 0: ERAC Files Level 1: Level 2:	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O31	ERS-2 Along Track Scanning Radiometer - 2	ESA: Worldwide coverage	ESA Brest: Apr 1995 – to date Infoterra Farnborough: Jun 1995 – Jun 2003	ESA: Ifremer Brest Volume: TBD ESA: Infoterra Farnborough Volume: MERCI ATSR2 - 11 TB	Level 0: EATC2 Calibrated Files Level 1: Level 2:	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O32	ERS-2 Radar Altimeter	ESA: Worldwide coverage	ESA Brest: Apr 1995 – to date Toulouse: 2000 – to date Farnborough: Mar 2008 – to date	ESA: Ifremer Brest Volume: 10 TB ESA: CNES Toulouse Volume: 6.7 TB ESA: Infoterra Farnborough Volume: 50 GB	Level 0: ERAC Files Level 1: Level 2	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O33	ENVISAT Advanced Along-Track	ESA: Worldwide coverage	ESA Infoterra: May 2002 – to date	ESA: Infoterra Farnborough Volume: 64 TB, MERCI AATSR 16 TB	Level 0: ENVISAT Level 1: Level 2:	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
	Scanning Radiometer		Kiruna: May 2002 – to date	ESA: Kiruna Salmijarvi Volume: 50 TB		<a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>  MERIS and AATSR: <a href="https://oa-es.eo.esa.int/ra/">https://oa-es.eo.esa.int/ra/</a> <a href="https://oa-ks.eo.esa.int/ra/">https://oa-ks.eo.esa.int/ra/</a>	
O34	ENVISAT Radar Altimeter - 2	ESA: Worldwide coverage	ESA Toulouse: May 2002 – to date  Kiruna: May 2002 – to date	ESA: CNES Toulouse Volume: 5.5 TB  ESA: Kiruna Salmijarvi Volume: 6.7 TB	Level 0: ENVISAT Level 1: Level 2:	<a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O35	Jason 1 JASON Microwave Radiometer	CNES: Global over ocean	2002 – to date	CNES Toulouse Volume Level 0 : 30 GB Level 1 : 10 GB	Level 0: binary Level 1: binary with ASCII header. Specific format	<a href="http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html">http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html</a>	CNES: M.Duplaa
O36	Jason 1 Laser Retroreflector Array	CNES: Global over ocean	2002 – to date	CNES Toulouse Volume: 90 MB	Level 0:ASCII specific format	<a href="http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html">http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html</a>	CNES: M.Duplaa
O37	Jason 1 Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator	CNES: Global over ocean	2002 – to date	CNES Toulouse Volume: Level 0 : 560 GB Level 1 : 25 GB Level 2 : 300 GB	Level 0: ASCII Level 1: proprietary format (binary with ASCII header) Level 2: SFDU CCSDS ASCII header	<a href="http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html">http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html</a>	CNES: M.Duplaa
O38	Jason 2 JASON Microwave Radiometer	CNES: Global over ocean	2008 - to date	CNES Toulouse Volume: 10 GB	Level 1:ASII specific format	<a href="http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html">http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html</a>	CNES: M.Duplaa
O39	Jason 2 Laser Retroreflector Array	CNES: Global over ocean	2008 - to date	CNES Toulouse	Level 0:ASCII specific	<a href="http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html">http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html</a>	CNES: M.Duplaa

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
				Volume: 20 MB	format	<a href="#">ormation/frames/general/products_uk.html</a>	
O40	Jason 2 Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator	Global over ocean	2008 - to date	CNES Toulouse  Volume: Level 0 : 280 GB Level 1 : 270 MB Level 2 : 1.4 TB  EUMETSAT Darmstadt  Volume: 0.1 TB / year (Ocean Surface Topography Mission)	CNES: Level 0: Binary specific format Level 1: specific format (binary with ASCII header) Level 2: NetCDF  EUMETSAT: Level 2: Netcdf	CNES: <a href="http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html">http://www-aviso.cnes.fr:8090/HTML/information/frames/general/products_uk.html</a>  EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	CNES: M.Duplaa  EUMETSAT Helpdesk: <a href="mailto:ops@eumetsat.int">ops@eumetsat.int</a> H. Rothfuss
O41	Jason – 3 Future Jason Payload	N.A.	N.A.	TBD	TBD	TBD	TBD
O42	Jason - CS Future Jason Payload	N.A.	N.A.	TBD	TBD	TBD	TBD
O43	Terra MODIS	ESA: European Coverage, North Africa	ESA Kiruna: Jul 2001 – to date Matera: Jul 2001 – to date Maspalomas: Apr 2001 – Jun 2001	ESA: SSC Kiruna Esrange Volume: 9.7 TB  ESA: ASI Matera Volume: 8.39 TB  ESA: INSA Maspalomas Volume: 10.67 TB including Aqua MODIS	ESA; Level 0: WILMA	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O44	Aqua MODIS	ESA: European Coverage, North Africa	ESA Matera: Apr 2003 – to date Maspalomas: Sep 2003 – to date	ESA: ASI Matera Volume: 5.06 TB  ESA: INSA Maspalomas Volume: included above	ESA: Level 0: WILMA	ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
O45	SPOT – 4 Vegetation	VITO: Global over land	VITO: April 1998 – February 2003: normal programming February 2003 – to date: special programming	VITO Belgium Volume (end 2009): Raw data: 2,8 Tb P-products: 3 Tb (zipped) S1 products: 2 Tb (zipped) S10 products: 250 Gb (zipped)	VITO:  Level 1: not available for customers  Level 2 archived data: - Segments (P products) - Daily and 10-daily syntheses (S1 and S10) Format: HDF  Plate Carrée 1 km resolution	VITO: <a href="http://www.vgt.vito.be/catalogue.html">http://www.vgt.vito.be/catalogue.html</a>	VITO: E. Goor
O46	SPOT – 5 Vegetation	VITO: Global over land	VITO: February 2003 - to date	VITO Belgium Volume (end 2009): Raw data: 3,5 Tb P-products: 4,2 Tb (zipped) S1 products: 2,8 Tb (zipped) S10 products: 350 Gb (zipped)	VITO: Level 1: not available for customers  Level 2 archived data: - Segments (P products) - Daily and 10-daily syntheses (S1 and S10) Format: HDF  Plate Carrée 1 km resolution	VITO: <a href="http://www.vgt.vito.be/catalogue.html">http://www.vgt.vito.be/catalogue.html</a>	VITO: E. Goor
O47	Orbview-2 SeaWifs	ESA: European Coverage, North Africa	ESA: Tromso: 1998 – to date Matera: Jul 1999 – to date Maspalomas: Apr 1997 – to date	ESA: KSAT Tromso Volume: 1 TB  ESA: ASI Matera Volume: 0.5 TB  ESA: INSA Maspalomas Volume: 0.38 TB	ESA:  Level 1b: SHARP Format	ESA:  <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
O48	QuickSCAT	ESA: Global	ESA Brest: Jul 1999 – Nov 1999	ESA: Ifremer Brest Volume: 2.8 TB	ESA:  Level 2a and 2b: Format TBD	ESA: Through ESA helpdesk	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
O49	BIRD Hot Spot Recognition System	DLR : Various locations worldwide	DLR : 2001 - to date	DLR Neustrelitz Volume: 1 TB	DLR: Level 0: HDF Level 1: HDF Level 2: HDF	DLR Internal	DLR: K.-D. Missling
O50	BIRD Wide-Angle Optoelectronic Stereo Scanner	DLR : Various locations worldwide	DLR : 2001 - to date	DLR Neustrelitz Volume: 1 TB	DLR: Level 0: HDF Level 1: HDF Level 2: HDF	DLR Internal	DLR: K.-D. Missling
O51	Sentinel – 3a Ocean and Land Colour Imager	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
O52	Sentinel – 3a Sea and Land Surface Temperature Radiometer	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
O53	Sentinel – 3a SAR Radar Altimeter	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
O54	Sentinel – 3b Ocean and Land Colour Imager	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
O55	Sentinel – 3b Sea and Land Surface Temperature Radiometer	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
O56	Sentinel – 3b SAR Radar Altimeter	N.A.	N.A.	TBD	TBD	TBD	ESA: V. Beruti, M. Albani
O57	SARAL AltiKa Ka-band Altimeter	N.A.	N.A.	CNES Toulouse Volume: N.A.	TBD	TBD	CNES: M.Duplaa
O58	Oceansat – 2 Ocean Colour Monitor	Global over ocean, measurements on ice, coastal areas, on inland waters.	TBD	TBD	TBD	TBD	ASI: M.Calabrese

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
O59	Oceansat – 2 Scatterometer	Global over ocean, measurements on ice, coastal areas, on inland waters.	TBD	TBD	TBD	TBD	ASI: M.Calabrese
O60	Oceansat – 3 Ku-band Altimeter	Global over ocean, measurements on ice, coastal areas, on inland waters.	N.A.	TBD	TBD	TBD	TBD
O61	Oceansat – 3 Ocean Colour Monitor	Global over ocean, measurements on ice, coastal areas, on inland waters.	N.A.	TBD	TBD	TBD	TBD
O62	Oceansat – 3 Passive Microwave Radiometer	Global over ocean, measurements on ice, coastal areas, on inland waters.	N.A.	TBD	TBD	TBD	TBD
O63	Oceansat – 3 Scatterometers	Global over ocean, measurements on ice, coastal areas, on inland waters.	N.A.	TBD	TBD	TBD	TBD
O64	Oceansat - 3 Thermal Infrared Radiometer	Global over ocean, measurements on ice, coastal areas, on inland waters.	N.A.	TBD	TBD	TBD	TBD
O65	IRS-P3 Modular Opto-electronic Scanner	ESA and DLR: European Coverage	ESA Maspalomas: Aug 1998 – Feb 2004  DLR Neustrelitz: 1996 – 2003	ESA: INSA Maspalomas Volume: 1.5 TB  DLR Neustrelitz Volume: 2.76 TB	ESA: Format and Level TBD  DLR: MOS-specific file format	ESA: Through ESA helpdesk  DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	ESA: V. Beruti, M. Albani  DLR: K.D. Missling
O66	Poseidon  Topex NASA Radar	CNES: Global over ocean	CNES: 1992 – 2005	CNES Toulouse Volume: 150 GB	CNES: Level 2: format TBD	CNES: <a href="http://avisodata-center.cnes.fr/ssalto">http://avisodata-center.cnes.fr/ssalto</a>	CNES: M.Duplaa

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
	Altimeter						
O67	Poseidon Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator	CNES: Global over ocean	CNES: 1992 – 2005	CNES Toulouse Volume: 150 GB (same files as O100)	CNES: Level 2: format TBD	CNES: <a href="http://aviso-data-center.cnes.fr/ssalto">http://aviso-data-center.cnes.fr/ssalto</a>	CNES: M.Duplaa
O68	Nimbus-7 CZCS	ESA: European coverage	ESA: Maspalomas: Sep 1980 – Dec 1984  Esrin: Nov 1978 – May 1986	ESA: INSA Maspalomas Volume: 20 GB on Exabytes  Esrin Volume: 150 GB	ESA: Level 1 and Level 2	ESA: Through ESA helpdesk	ESA: V. Beruti, M. Albani
O69	ADEOS - 1 POLarization and Directionality of the Earth's Reflectances	CNES: Global	CNES: Aug 1996 – Jun 1997	CNES Toulouse Volume: 4 TB for Polder instrument 1	CNES: Level 0: archived Level 1: archived Level 2: archived Level 3 : archived  Specific format for all levels	CNES: <a href="http://www.parasol-polder.cnes.fr">www.parasol-polder.cnes.fr</a> <a href="http://www.icare.univ-lille1.fr">www.icare.univ-lille1.fr</a> (for L2 and L3 Aerosol and clouds)	CNES: M.Duplaa
O70	ADEOS – 2 POLarization and Directionality of the Earth's Reflectances	CNES: Global	CNES: Nov 2002 – Oct 2003	CNES Toulouse Volume: 3.5 TB for Polder instrument 2	CNES: Level 0: archived Level 1: archived Level 2: archived Level 3 : archived  Specific format for all levels	CNES: <a href="http://www.parasol-polder.cnes.fr">www.parasol-polder.cnes.fr</a> <a href="http://www.icare.univ-lille1.fr">www.icare.univ-lille1.fr</a> (for L2 and L3 Aerosol and clouds)	CNES: M.Duplaa
O71	Cryosat-2 SAR Interferometer Radar Altimeter	ESA: Global	ESA: April 2010 – to date	ESA: CNES Toulouse Volume: N.A.	ESA: Level 0: Level 1: Level 2:	TBD	ESA: V.Beruti, M.Albani
O72	SAC-D Aquarius L-Band Scatterometer	N.A.	N.A.	TBD	TBD	TBD	TBD
O73	SAC-D High Sensitivity Camera	N.A.	N.A.	TBD	TBD	TBD	TBD
O74	SAC-D Aquarius L-Band Radiometer	N.A.	N.A.	TBD	TBD	TBD	TBD

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
O75	SAC – D Microwave Radiometer	N.A.	N.A.	TBD	TBD	TBD	TBD
O76	SAC- D New Infrared Scanner Technology	N.A.	N.A.	TBD	TBD	TBD	TBD
O77	SAOCOM 1A, TIR Camera	N.A.	N.A.	TBD	TBD	TBD	TBD

## 5. C4: ATMOSPHERIC

### 5.1 Atmospheric. Table 1

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
A1	ERS-1 Microwave radiometer (MWR)	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/GG/GWBR8RVDC_index_0.html">http://www.esa.int/esaEO/GG/GWBR8RVDC_index_0.html</a>	Mission: Completed Timeframe: Launch Date: Jul 1991 EOL Date: Mar 2000 Instrument: Not Operational	Microwave Radiometer	The Microwave Radiometer - MWR (sometimes referred to as Microwave Sounder - MWS) is a nadir-viewing passive radiometer (two channels at 23.8 and 36.5 GHz) providing measurements of the total water content of the atmosphere within a 20 km footprint.	The main purpose of the microwave radiometer is the measurement of the tropospheric path delay for the altimeter through the measurements of the atmospheric integrated water vapor content and the estimate of the attenuation of the altimetric signal by the liquid water content of the clouds.
A2	ERS-1 Active Microwave Instrumentation. Wind mode	Owner & Distributor ESA	Same as above	Mission: Completed Timeframe: Launch Date: Jul 1991 EOL Date: Mar 2000 Instrument: Not Operational	Scatterometers	<b>Resolution Summary</b> Cells of 50 x 50 km at 25 km intervals <b>Swath Summary</b> 500 km <b>Accuracy Summary</b> Sea surface wind speed: 3 m/s, Sea ice type: 2 classes <b>Waveband Summary</b> Microwave: 5.3 GHz (C-band), VV polarisation	Measurements of wind fields at the ocean surface, wind direction (range 0 - 360 deg), wind speed (range 1 - 30 m/s)
A3	ERS-2 Microwave radiometer (MWR)	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/SE/MGWH2VQUD_index_0_m.html">http://www.esa.int/esaEO/SE/MGWH2VQUD_index_0_m.html</a>	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: Operational	Microwave Radiometer	The Microwave Radiometer - MWR (sometimes referred to as Microwave Sounder - MWS) is a nadir-viewing passive radiometer (two channels at 23.8 and 36.5 GHz) providing measurements of the total water content of the atmosphere within a 20 km footprint.	The main purpose of the microwave radiometer is the measurement of the tropospheric path delay for the altimeter through the measurements of the atmospheric integrated water vapor content and the estimate of the attenuation of the altimetric signal by the liquid water content of the clouds.
A4	ERS-2	Owner & Distributor	Type: Sun-synchronous Altitude: 782 km	Mission: On-going	Scatterometers	<b>Resolution Summary</b> Cells of 50 x 50 km at 25 km intervals	Measurements of wind fields at the ocean surface, wind direction

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Active Microwave Instrumentation. Wind mode	ESA	Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/SE_MGWH2VQUD_index_0_m.html">http://www.esa.int/esaEO/SE_MGWH2VQUD_index_0_m.html</a>	Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: Operatio		<b>Swath Summary</b> 500 km <b>Accuracy Summary</b> Sea surface wind speed: 3 m/s, Sea ice type: 2 classes  <b>Waveband Summary</b> Microwave: 5.3 GHz (C-band), VV polarisation	(range 0 - 360 deg), wind speed (range 1 - 30 m/s)
A5	ERS-2 PRARE	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaEO/SE_MGWH2VQUD_index_0_m.html">http://www.esa.int/esaEO/SE_MGWH2VQUD_index_0_m.html</a>	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: Operational	microwave satellite tracking	With the assistance of a global network of mobile, unattended, autonomously operating ground stations, the system performs synchronous two-way pn-coded range (= slant distance) and carrier shifted range-rate (= relative velocity) measurements at a sub-decimeter resp. sub-millimeter/second level of accuracy.	The Precise Range And Range-Rate Equipment PRARE is a compact, space-borne, two-way, two-frequency microwave satellite tracking system that is in routine operations onboard the second European Remote Sensing satellite ERS-2 since May 1st, 1995.
A6	ERS-2 Global Ozone Monitoring Experiment	Owner & Distributor ESA	Same as above	Mission: On-going Timeframe: Launch Date: 21 Apr 1995 Planned EOL Date: 31 Dec 2011 Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Vertical: 5 km (for O3), Horizontal: 40 x 40 km to 40 x 320 km <b>Swath Summary</b> 120 - 960 km <b>Waveband Summary</b> UV-NIR: 0.24 - 0.79 µm (resolution 0.2 - 0.4 nm)	Measurements of sea surface temperature, land surface temperature, cloud top temperature and cloud cover, aerosols, vegetation, atmospheric water vapour and liquid water content
A7	ENVISAT Microwave radiometer (MWR)	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 782 km Period: 100.5 mins Inclination: 98.52 deg Repeat cycle: 35 days LST: 10:30 Longitude (if geo): Asc/desc: Descending URL: <a href="http://envisat.esa.int/">http://envisat.esa.int/</a>	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Microwave Radiometer	The MWR instrument on board Envisat is a derivative of the radiometers used on the ERS-1 and ERS-2 satellites. It is a dual-channel nadir-pointing Dicke-type radiometer, operating at frequencies of 23.8 GHz and 36.5 GHz.	The main objective of the microwave radiometer is the measurement of atmospheric humidity as supplementary information for tropospheric path correction of the radar altimeter signal, which is influenced both by the integrated atmospheric water vapour content and by liquid water. In addition, MWR measurement data are useful for

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
							the determination of surface emissivity and soil moisture over land, for surface energy budget, investigations to support atmospheric studies, and for ice characterisation.
A8	ENVISAT DORIS	Owner & Distributor ESA	Same as above	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	microwave tracking system	The Doppler Orbitography and Radio-positioning Integrated by Satellite instrument is a microwave tracking system that can be utilized to determine the precise location of the ENVISAT satellite. DORIS operates by measuring the Doppler frequency shift of a radio signal transmitted from ground stations and received on-board the satellite. Currently there are about 50 ground beacons placed around the globe which cover about 75% of the ENVISAT orbit. Precise Doppler shift measurements are taken using an S-band frequency of 2.03625 GHz, while a second VHS band signal at 401.25 MHz is used for ionospheric correction of the propagation delay.	On the ground, DORIS data is used to create precise orbit reconstruction models which are then used for all satellite instruments requiring precise orbit position information. In addition, DORIS operates in a Navigator mode in which on-board positioning calculations are performed in real-time and relayed to the ground segment.
A9	ENVISAT Scanning Imaging Absorption Spectrometer for Atmospheric Chartography	Owner & Distributor ESA	Same as above	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Atmospheric chemistry	<b>Resolution Summary</b> Limb vertical 3 x 132 km, Nadir horizontal 32 x 215 km <b>Swath Summary</b> Limb and nadir mode: 1000 km (max) <b>Accuracy Summary</b> Radiometric: <4% <b>Waveband Summary</b> UV - SWIR: 240 - 314 nm, 309 - 3405 nm, 394 - 620 nm, 604 - 805 nm, 785 - 1050 nm, 1000 - 1750 nm, 1940 - 2040 nm and 2265 - 2380 nm	Measures middle atmosphere temperature. Provides tropospheric and stratospheric profiles of O <sub>2</sub> , O <sub>3</sub> , O <sub>4</sub> , CO, N <sub>2</sub> O, NO <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , H <sub>2</sub> O, and tropospheric and stratospheric profiles of aerosols and cloud altitude
A10	ENVISAT	Owner & Distributor	Same as above	Mission: On-going	Atmospheric	<b>Resolution Summary</b> 1.7 km vertical <b>Swath Summary</b> Not applicable	Stratospheric profiles of temperature and of ozone, NO <sub>2</sub> ,

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Global Ozone Monitoring by Occultation of Stars	ESA		Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	chemistry	<b>Waveband Summary</b> Spectrometers: UV - VIS: 248 - 371 nm and 387 - 693 nm, NIR: 750 - 776 nm and 915 - 956 nm, Photometers: 644 - 705 nm and 466 - 528 nm	H2O, aerosols and other trace species
A11	ENVISAT Michelson Interferometric Passive Atmosphere Sounder	Owner & Distributor ESA	Same as above	Mission: On-going Timeframe: Launch Date: 01 Mar 2002 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> Vertical resolution: 3 km, vertical scan range 5 - 150 km, Horizontal: 3 x 30 km, Spectral resolution: 0.035 lines/cm <b>Swath Summary Accuracy Summary</b> Radiometric precision: 685 - 970 cm-1: 1%, 2410 cm-1: 3% <b>Waveband Summary</b> MWIR-TIR: between 4.15 and 14.6 µm	Data on stratosphere chemistry (global/polar ozone), climate research (trace gases/clouds), transport dynamics, tropospheric chemistry. Primary/secondary species: O3, NO, NO2, HNO3, N2O5, ClONO2, CH4
A12	Meteosat - 1	Owner & Distributor: EUMETSAT	Type: Geostationary Altitude: 36000 km Longitude (if geo): 0 URL: <a href="http://www.eumetsat.int/Home/Main/Access_to_Data/Archive_Service/index.htm?l=en">http://www.eumetsat.int/Home/Main/Access_to_Data/Archive_Service/index.htm?l=en</a>	Mission: Completed Timeframe: Launch Date: 01 Jan 1977 EOL Date: 01 Jan 1985 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A13	Meteosat -2	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: Completed Timeframe: Launch Date: 01 Jan 1981 EOL Date: 01 Jan 1993 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
A14	Meteosat – 3	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: Completed Timeframe: Launch Date: 01 Jan 1988 EOL Date: 01 Jan 1995 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A15	Meteosat – 4 METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: Completed Timeframe: Launch Date: 01 Jan 1989 EOL Date: 01 Jan 1995 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A16	Meteosat – 5 METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: Completed Timeframe: Launch Date: 02 Mar 1991 EOL Date: 26 Apr 2007 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A17	Meteosat – 6 METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: On-going Timeframe: Launch Date: 20 Nov 1993	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height:	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				EOL Date: 31 Dec 2013 Instrument: Operational		0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 $\mu\text{m}$ , TIR: 5.7 - 7.1 $\mu\text{m}$ (water vapour), 10.5 - 12.5 $\mu\text{m}$	
A18	Meteosat – 7 METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: On-going Timeframe: Launch Date: 03 Sep 1997 Planned EOL Date: 31 Dec 2013 Instrument: Operational	Imaging multi- spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 $\mu\text{m}$ , TIR: 5.7 - 7.1 $\mu\text{m}$ (water vapour), 10.5 - 12.5 $\mu\text{m}$	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A19	Metostat – 8 (MSG1) METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: On-going Timeframe Launch Date: 13 Aug 2002 Planned EOL Date: 30 Jun 2011 Instrument : Operational	Imaging multi- spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 $\mu\text{m}$ , TIR: 5.7 - 7.1 $\mu\text{m}$ (water vapour), 10.5 - 12.5 $\mu\text{m}$	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A20	Metostat – 9 (MS21) METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: On-going Timeframe Launch Date: 21 Dec 2005 Planned EOL Date: 30 Jun 2014 Instrument : Operational	Imaging multi- spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 $\mu\text{m}$ , TIR: 5.7 - 7.1 $\mu\text{m}$ (water vapour), 10.5 - 12.5 $\mu\text{m}$	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
A21	Metostat – 10 (MSG3) METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: Future Timeframe: Planned Launch Date: 31 Jan 2012 Planned EOL Date: 31 Jan 2019 Instrument : Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A22	Metostat – 11 (MSG4) METEOSAT Visible and Infra-Red Imager	Owner & Distributor: EUMETSAT	Same as Meteosat-1	Mission: Future Timeframe Planned Launch date: 31 Jan 2014 Planned EOL Date: 31 Jan 2021 Instrument : Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> Visible: 2.5 km, Water vapour: 5 km (after processing), TIR: 5 km <b>Swath Summary</b> Full Earth disk in all three channels, every 30 minutes <b>Accuracy Summary</b> Cloud top height: 0.5 km, Cloud top/ sea surface temperature: 0.7 K, Cloud cover 15% <b>Waveband Summary</b> VIS - NIR: 0.5 - 0.9 µm, TIR: 5.7 - 7.1 µm (water vapour), 10.5 - 12.5 µm	Measures cloud cover, motion, height, upper tropospheric humidity and sea surface temperature
A23	METOP–A Global Ozone Monitoring Experiment – 2 (GOME-2)	Owner: EUMETSAT Agreement with DLR	Type: Sun-synchronous Altitude: 840 km Period: 107.1 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LP_metop.html">http://www.esa.int/esaLP/LP_metop.html</a>	Mission: On-going Timeframe: Launch Date: 19 Oct 2006 Planned EOL Date: 30 Apr 2012 Instrument: Operational	Atmospheric chemistry	<b>Resolution Summary</b> Horizontal: 40 x 40 km (960 km swath) to 40 x 5 km (for polarization monitoring) <b>Swath Summary</b> 120 - 960 km <b>Accuracy Summary</b> Cloud top height: 1 km (rms), Outgoing short wave radiation and solar irradiance: 5 W/m <sup>2</sup> , Trace gas profile: 10 - 20%, Specific humidity profile: 10 - 50 g/kg <b>Waveband Summary</b> UV - NIR: 0.24 - 0.79µm (resolution 0.2 - 0.4 nm)	Measurement of total column amounts and stratospheric and tropospheric profiles of ozone. Also amounts of H <sub>2</sub> O, NO <sub>2</sub> , OClO, BrO, SO <sub>2</sub> and HCHO.
A24	METOP–A GNSS Receiver	Owner: EUMETSAT	Same as above	Mission: On-going Timeframe:	Atmospheric temperature and	Waveband:	GNSS receiver for atmospheric temperature and humidity profile

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	for Atmospheric Sounding (GRAS)			Launch Date: 19 Oct 2006 Planned EOL Date: 30 Apr 2012 Instrument: Operational	humidity sounders and precision orbit	Spatial resolution: Vertical: 150 m (troposphere) and 1.5 km (stratosphere), Horizontal: 100 km approx (troposphere), 300 km approx (stratosphere) Swath width: Altitude range of 5 - 30 km Accuracy: Temperature sounding to 1 K rms	sounding
A25	METOP-B Global Ozone Monitoring Experiment – 2 (GOME-2)	Owner: EUMETSAT Agreement with DLR and ESA TBC	Type: Sun-synchronous Altitude: 840 km Period: 101.7 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LP/metop.html">http://www.esa.int/esaLP/LP/metop.html</a>	Mission: Future Timeframe: Planned Launch Date: 02 Apr 2012 Planned EOL Date: 01 May 2017 Instrument: Not Operational	Atmospheric chemistry	<b>Resolution Summary</b> Horizontal: 40 x 40 km (960 km swath) to 40 x 5 km (for polarization monitoring) <b>Swath Summary</b> 120 - 960 km <b>Accuracy Summary</b> Cloud top height: 1 km (rms), Outgoing short wave radiation and solar irradiance: 5 W/m <sup>2</sup> , Trace gas profile: 10 - 20%, Specific humidity profile: 10 - 50 g/kg <b>Waveband Summary</b> UV - NIR: 0.24 - 0.79µm (resolution 0.2 - 0.4 nm)	Measurement of total column amounts and stratospheric and tropospheric profiles of ozone. Also amounts of H <sub>2</sub> O, NO <sub>2</sub> , OClO, BrO, SO <sub>2</sub> and HCHO.
A26	METOP-C Global Ozone Monitoring Experiment - 2	Owner: EUMETSAT Agreement with DLR and ESA TBC	Type: Sun-synchronous Altitude: 840 km Period: 101.7 mins Inclination: 98.8 deg Repeat cycle: 29 days LST: 9:30 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/LP/metop.html">http://www.esa.int/esaLP/LP/metop.html</a>	Mission: Future Timeframe: Planned Launch Date: 02 Apr 2016 Planned EOL Date 01 Dec 2021 Instrument: Not Operational	Atmospheric chemistry	<b>Resolution Summary</b> Horizontal: 40 x 40 km (960 km swath) to 40 x 5 km (for polarization monitoring) <b>Swath Summary</b> 120 - 960 km <b>Accuracy Summary</b> Cloud top height: 1 km (rms), Outgoing short wave radiation and solar irradiance: 5 W/m <sup>2</sup> , Trace gas profile: 10 - 20%, Specific humidity profile: 10 - 50 g/kg <b>Waveband Summary</b> UV - NIR: 0.24 - 0.79µm (resolution 0.2 - 0.4 nm)	Measurement of total column amounts and stratospheric and tropospheric profiles of ozone. Also amounts of H <sub>2</sub> O, NO <sub>2</sub> , OClO, BrO, SO <sub>2</sub> and HCHO.
A27	SciSat Atmospheric Chemistry Experiment (ACE) Fourier	Owner & Distributor CSA Agreement with	Type: Inclined, non-synchronous Altitude: 650 km Period: 97.7 mins Inclination: 74 deg	Mission: Ongoing Timeframe : Launch date: 12 Aug 2003	Atmospheric chemistry	<b>Waveband Summary</b> SWIR - TIR: 2 - 5.5 µm, 5.5 - 13 µm (0.02 cm <sup>-1</sup> resolution)	Measure and understand the chemical processes that control the distribution of ozone in the Earth's atmosphere, especially at high

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Transform Spectrometer	ESA	Repeat cycle: 365 days LST: Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.asc-csa.gc.ca/eng/satellites/scisat/default.asp">http://www.asc-csa.gc.ca/eng/satellites/scisat/default.asp</a>	Planned EOL date: N.A. Instrument: Operational			altitudes.
A28	SciSat Measurements of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation (MAESTRO)	Owner & Distributor CSA  Agreement with ESA	Type: Inclined, non-sunsynchronous Altitude: 650 km Period: 97.7 mins Inclination: 74 deg Repeat cycle: 365 days LST: Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.asc-csa.gc.ca/eng/satellites/scisat/default.asp">http://www.asc-csa.gc.ca/eng/satellites/scisat/default.asp</a>	Mission: Ongoing  Timeframe : Launch date: 12 Aug 2003 Planned EOL date: N.A. Instrument: Operational	Atmospheric chemistry	<b>Resolution Summary</b> Approx 1 - 2 km vertical  <b>Waveband Summary</b> UV - NIR: 0.285 - 1.03 $\mu\text{m}$ (1 - 2 nm spectral resolution)	Chemical processes involved in the depletion of the ozone layer.
A29	Odin Optical Spectrograph and Infra-Red Imaging System	Owner: SNSB/SSC	Type: Sun-synchronous Altitude: 590 km Period: 97.6 mins Inclination: 97.8 deg Repeat cycle: LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.ssc.se/?id=7180">http://www.ssc.se/?id=7180</a>	Mission: On-going  Timeframe: Launch Date: 20 Feb 2001 Planned EOL Date: 31 Dec 2012 Instrument: Operational	Atmospheric chemistry	<b>Resolution Summary</b> Spectrograph 1 km at limb, Imager 1 km in vertical <b>Swath Summary</b> N/A, but measures in the altitude range 5 - 100 km <b>Accuracy Summary</b> Depends on species <b>Waveband Summary</b> Spectrograph: UV - NIR: 0.28 - 0.80 $\mu\text{m}$ ; IR Imager: NIR: 1.26 $\mu\text{m}$ , 1.27 $\mu\text{m}$ , 1.52 $\mu\text{m}$	Detects aerosol layers and abundance of species such as O <sub>3</sub> , NO <sub>2</sub> , OClO, and NO. Consists of spectrograph and IR imager. Measures temperature for altitudes above 30km.
A30	Odin Submillimetre Radiometer	Owner: SNSB/SSC	Same as above	Mission: On-going  Timeframe: Launch Date: 20 Feb 2001 Planned EOL Date: 31 Dec 2012 Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> Vertical resolution 1.5 - 3 km, along track 600 km <b>Swath Summary</b> Altitudes of 5 - 100 km <b>Accuracy Summary</b> 2 - 40% depending on species and altitude <b>Waveband Summary</b> Microwave: 118.7 GHz + 4 bands in the region 480 - 580 GHz: Tunable measures 2 - 3 x 1 GHz regions at a time; ~0.1 cm - ~0.3 cm	<b>Measurements and Applications</b> Measures global distributions of ozone and species of importance for ozone chemistry, ClO, HNO <sub>3</sub> , H <sub>2</sub> O, N <sub>2</sub> O, (HO <sub>2</sub> , H <sub>2</sub> O <sub>2</sub> ). Measures temperature in the height range 15-100km.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
A31	Parasol POLarization and Directionality of the Earth's Reflectances (PARASOL version)	Owner & Distributor CNES	Type: Sun-synchronous Altitude: 705 km Period: 98.8 mins Inclination: Repeat cycle: LST: 12:00 Longitude (if geo): Asc/desc: TBD <a href="http://www.cnes.fr/web/CNES-en/1474-parasol.php">http://www.cnes.fr/web/CNES-en/1474-parasol.php</a>	Mission : On-going Timeframe: Launch Date: 01 Dec 2004 Planned EOL Date: N.A. Instrument: Operational	Multiple direction/polarisation radiometers	<b>Resolution Summary</b> 5.5 x 5.5 km <b>Swath Summary</b> 1600 km <b>Accuracy Summary</b> Radiation budget, land surface, Reflectance: 2% <b>Waveband Summary</b> VIS - NIR: 0.490 µm, 0.670 µm and 0.865 µm at 3 polarisations, and 0.49 µm, 0.565 µm, 0.763 µm, 0.765 µm, 0.91 µm, and 1.02 µm with no polarisation	<b>Measurements and Applications</b> Measures polarisation, and directional and spectral characteristics of the solar light reflected by aerosols, clouds, oceans and land surfaces
A32	Megha-Tropiques Microwave Analysis and Detection of Rain and Atmospheric Structures	Owner & Distributor CNES/ISRO	Type: Inclined, non-sunsynchronous Altitude: 867 km Period: 102.16 mins Inclination: 20 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.cnes.fr/web/CNES-fr/5462-megha-tropiques.php">http://www.cnes.fr/web/CNES-fr/5462-megha-tropiques.php</a>	Mission: Future Timeframe: Planned Launch Date: second half of 2010 Planned EOL Date: N.A. Instrument: Not Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 40 km <b>Swath Summary</b> 1700 km <b>Waveband Summary</b> 18.7 GHz, 23.8 GHz, 36.5 GHz, 89 GHz, 157 GHz	To estimate rainfall, atmospheric water parameters and ocean surface winds in the equatorial belt
A33	Megha-Tropiques Sondeur Atmospherique du Profil'd'Humidite Intertropicale par Radiometrie	Owner & Distributor CNES/ISRO	Type: Inclined, non-sunsynchronous Altitude: 865 km Period: 102.16 mins Inclination: 20 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.cnes.fr/web/CNES-fr/5462-megha-tropiques.php">http://www.cnes.fr/web/CNES-fr/5462-megha-tropiques.php</a>	Mission: Future Timeframe: Planned Launch Date: second half of 2010 Planned EOL Date: N.A. Instrument: Not Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 10 km <b>Swath Summary</b> 2200 km <b>Waveband Summary</b> Microwave: 183.3 GHz (6 channels)	Cross-track sounder with the objective of measuring water vapour profiles in the troposphere in six layers from 2-12km altitudes
A34	Megha-Tropiques Scanner for	Owner & Distributor CNES	Type: Inclined, non-sunsynchronous Altitude: 867 km	Mission: Future	Earth radiation budget	<b>Resolution Summary</b> 40 km <b>Swath Summary</b> 2200 km <b>Accuracy Summary</b> Absolute: ± 2.5 W/m <sup>2</sup> /sr,	Measures top-of-atmosphere shortwave radiation (0.2 - 4.0 µm)

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Earth's Radiation Budget		Period: 102.16 mins Inclination: 20 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.cnes.fr/web/CNES-fr/5462-megha-tropiques.php">http://www.cnes.fr/web/CNES-fr/5462-megha-tropiques.php</a>	Timeframe: Planned Launch Date: second half of 2010 Planned EOL Date: N.A. Instrument: Not Operational	radiometers	Relative: $\pm 0.7$ W/m <sup>2</sup> /sr <b>Waveband Summary</b> VIS window channel: 0.5 - 0.7 $\mu$ m, Solar channel UV - SWIR: 0.2 - 4 $\mu$ m, Total channel UV - FIR: 0.2 - 50 $\mu$ m, Thermal window channel: 10.5 - 12.5 $\mu$ m	and total radiation (0.2 - 50 $\mu$ m). Two additional narrow-band channels (0.5 - 0.7 $\mu$ m and 11 - 12 $\mu$ m) allow cloud detection and scene identification
A35	ADM-Aeolus Atmospheric Laser Doppler Instrument	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 408 km Period: 92.5 mins Inclination: 97.01 deg Repeat cycle: 7 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.esa.int/esaLP/ESAES62VMOC_LPadmaeolus_0.html">http://www.esa.int/esaLP/ESAES62VMOC_LPadmaeolus_0.html</a>	Mission: Future Timeframe: Planned Launch Date: 01 Nov 2011 Planned EOL Date: 01 Nov 2014 Instrument: Not Operational	Lidars	<b>Resolution Summary</b> One wind profile every 200 km along track, averaged over 50 km <b>Swath Summary</b> Along line 285 km parallel to satellite ground track <b>Accuracy Summary</b> Wind speed error below 2 m/s <b>Waveband Summary</b> UV: 355 nm	Global wind profiles (single line-of-sight) for an improved weather prediction
A36	EarthCARE ATmospheric LIDar	Owner & Distributor ESA	Type: Sun-synchronous Altitude: 450 km Period: Inclination: 97 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.esa.int/esaLP/ASESMYNW9SC_LPearthcare_0.html">http://www.esa.int/esaLP/ASESMYNW9SC_LPearthcare_0.html</a>	Mission: Future Timeframe : Planned Launch Date: 01 Jun 2013 Planned EOL Date: 01 Jun 2016 Instrument: Not Operational	Lidars	<b>Resolution Summary</b> 300 m horizontal (TBC) <b>Waveband Summary</b> Laser at 355 nm	Derivation of cloud and aerosol properties - Measurement of molecular and particle backscatter in Rayleigh, co-polar and cross-polar Mie channels
A37	EarthCARE BroadBand Radiometer (EarthCARE)	Owner & Distributor ESA	Same as above	Mission: Future Timeframe : Planned Launch Date: 01 Jun 2013 Planned EOL Date: 01 Jun 2016	Earth radiation budget radiometers	<b>Resolution Summary</b> 10 x 10 km ground pixel size for each of the three views <b>Accuracy Summary</b> flux retrieval accuracy 10 Wm <sup>-2</sup> <b>Waveband Summary</b> Shortwave channel: 0.2 - 4 $\mu$ m, Total channel 0.2 - 50 $\mu$ m	Top of the atmosphere radiances and radiative flux

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				Instrument: Not Operational			
A38	EarthCARE Cloud Profiling Radar (EarthCARE)	Owner & Distributor ESA	Same as above	Mission: Future Timeframe : Planned Launch Date: 01 Jun 2013 Planned EOL Date: 01 Jun 2016 Instrument: Not Operational	Cloud profile and rain radars	<b>Resolution Summary</b> 500 m horizontal <b>Waveband Summary</b> Microwave: 94 GHz	Measurement of cloud properties, light precipitation, vertical motion
A39	EarthCARE Multi-Spectral Imager (EarthCARE)	Owner & Distributor ESA	Same as above	Mission: Future Timeframe : Planned Launch Date: 01 Jun 2013 Planned EOL Date: 01 Jun 2016 Instrument: Not Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 500 x 500 m [Best Resolution: 500m] <b>Swath Summary</b> 150 km swatch with, asymmetrically; 35 km to 115 km versus nadir point [Max Swath: 150 km] <b>Waveband Summary</b> VIS - NIR: Band1: VIS, 670 nm, Band2: NIR, 865 nm, Band3: SWIR-1, 1.67 µm, Band4: SWIR-2, 2.21 µm, Thermal Infrared: Band5: 8.8 µm, Band6: 10.8µm, Band7: 12.0 µm	Observation of cloud properties and aerosol (aerosols to be confirmed)
A40	Oceansat – 2 Radio Occultation Sounder for Atmospheric studies (ROSA)	Owner: ISRO/ASI	Type: Sun-synchronous Altitude: 720 km Period: 99.31 mins Inclination: 98.28 deg Repeat cycle: 2 days LST: Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.isro.org/http://www.asi.it/Rosa/RosaIT/ROSA.htm">http://www.isro.org/http://www.asi.it/Rosa/RosaIT/ROSA.htm</a>	Mission: On-going Timeframe: Launch Date: 24 Sep 2009 Planned EOL Date: 24 Sep 2013 Instrument: Operational	Radio Occultation Sounder for the Atmosphere	<b>Accuracy Summary</b> <1.0 K temperature, 0.2 g/kg Humidity <b>Waveband Summary</b> Frequency 1560 - 1590 MHz and 1212 - 1242 MHz	It will provide vertical profiles of atmospheric density, refractivity, pressure, temperature and humidity upto height of 30 km
A41	SAC-D Radio Occultation Sounder for Atmospheric	Owner: CONAE/ASI	Type: Sun-synchronous Altitude: 657 km Period: 98 mins Inclination: 98 deg Repeat cycle: 9 days	Mission: Future Timeframe: Planned Launch Date: April 2011	Radio Occultation Sounder for the Atmosphere	<b>Accuracy Summary</b> <1.0 K temperature, 0.2 g/kg Humidity <b>Waveband Summary</b> Frequency 1560 - 1590 MHz and 1212 - 1242 MHz	It will provide vertical profiles of atmospheric density, refractivity, pressure, temperature and humidity upto height of 30 km

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	studies (ROSA)		LST: 10:15 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.conae.gov.ar/">http://www.conae.gov.ar/</a> <a href="http://www.asi.it/Rosa/RosaT/ROSA.htm">http://www.asi.it/Rosa/RosaT/ROSA.htm</a>	Planned EOL Date: April 2016  Instrument: Not Operational			
A42	GOSAT Thermal And Near infrared Sensor for carbon Observation - Cloud and Aerosol Imager	Owner: JAXA  Agreement with ESA	Type: Sun-synchronous Altitude: 666 km Period: 98 mins Inclination: 98.05 deg Repeat cycle: 3 days LST: 13:00 Longitude (if geo): Asc/desc: Descending URL: <a href="http://www.jaxa.jp/projects/sat/gosat/index_e.html">http://www.jaxa.jp/projects/sat/gosat/index_e.html</a>	Mission: On-going  Timeframe: Launch Date: 23 Jan 2009 Planned EOL Date: 01 Jan 2014  Instrument: Operational	Imaging multi-spectral radiometers (vis/IR)	<b>Resolution Summary</b> 0.5 km (0.380, 0.678, 0.870 $\mu\text{m}$ bands), 1.5 km (1.62 $\mu\text{m}$ band) <b>Swath Summary</b> 1000 km (0.380 $\mu\text{m}$ , 0.678 $\mu\text{m}$ , 0.870 $\mu\text{m}$ bands), 750 km (1.62 $\mu\text{m}$ band) <b>Waveband Summary</b> 0.380 $\mu\text{m}$ , 0.678 $\mu\text{m}$ , 0.870 $\mu\text{m}$ , 1.62 $\mu\text{m}$	Measurement of cloud and aerosol for calibration of TANSO-FTS
A43	GOSAT Thermal And Near infrared Sensor for carbon Observation - Fourier Transform Spectrometer	Owner: JAXA  Agreement with ESA	Same as above	Mission: On-going  Timeframe: Launch Date: 23 Jan 2009 Planned EOL Date: 01 Jan 2014  Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Resolution Summary</b> 10.5 km <b>Swath Summary</b> 160 km <b>Waveband Summary</b> 0.758 - 0.775 $\mu\text{m}$ , 1.56 - 1.72 $\mu\text{m}$ , 1.92 - 2.08 $\mu\text{m}$ , 5.56 - 14.3 $\mu\text{m}$	CO2 and methane distribution

## 5.2 Atmospheric. Table 2

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
A1	ERS-1 Microwave radiometer (MWR)	ESA: Global	ESA: Brest Aug 1991 – June 1996	ESA: Ifremer Brest Volume: Included into ERS-1 RA	ESA : Levels and formats TBD	ESA Helpdesk	ESA: V. Beruti, M. Albani
A2	ERS-1 Active Microwave Instrumentation. Wind mode	ESA: Global	TBD	TBD	ESA : Levels and formats TBD	ESA <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
A3	ERS-2 Microwave radiometer (MWR)	ESA: Global	ESA: Brest Apr 1995 – to date	ESA: Ifremer Brest Volume: Included into ERS-2 RA	ESA : Levels and formats TBD	ESA Helpdesk	ESA: V. Beruti, M. Albani
A4	ERS-2 Active Microwave Instrumentation. Wind mode	ESA: Global	TBD	TBD	ESA : Levels and formats TBD	ESA <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
A5	ERS-2 PRARE	ESA: Global	ESA: Apr 1995 – to date	TBD	ESA : Levels and formats TBD	Not Available	ESA: V. Beruti, M. Albani
A6	ERS-2 Global Ozone Monitoring Experiment	ESA: Global	ESA: 1995 – to date	ESA: DLR Oberpfaffenhofen Volume: 3 TB	ESA : Levels and formats TBD	ESA <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
A7	ENVISAT Microwave radiometer (MWR)	ESA: Global	ESA: Kiruna Apr 2002 – to date	ESA: Kiruna Salmijarvi Volume: 26 GB	ESA: Level 0	ESA Helpdesk	ESA: V. Beruti, M. Albani
A8	ENVISAT DORIS	ESA: Global	ESA: Kiruna Mar 2002 – to date	ESA: Kiruna Salmijarvi Volume: 12 GB	ESA: Level 0	Via FTP	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
A9	ENVISAT Scanning Imaging Absorption Spectrometer for Atmospheric Chartography	ESA: Global	ESA: Kiruna: May 2002 – to date Oberpfaffenhofen: May 2002 – to date	ESA: Kiruna Salmijarvi Volume: 20 TB ESA: DLR Oberpfaffenhofen Volume: 25 TB	ESA: Level 0, 1 and 2: Envisat generic format	ESA <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
A10	ENVISAT Global Ozone Monitoring by Occultation of Stars	ESA: Global	ESA: Kiruna: May 2002 – to date Oberpfaffenhofen: 2002 – to date Sodankyla: Jan 2004 – to date	ESA: Kiruna Salmijarvi Volume: 5.3 TB ESA: DLR Oberpfaffenhofen Volume: 6 TB ESA: Sodankyla Volume: 2.5 TB (Level 2 only)	ESA: Level 1 and 2: Envisat generic format	ESA <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
A11	ENVISAT Michelson Interferometric Passive Atmosphere Sounder	ESA: Global	ESA: Kiruna: May 2002 – to date Oberpfaffenhofen: 2002 – to date	ESA: Kiruna Salmijarvi Volume: 12 TB ESA: DLR Oberpfaffenhofen Volume: 12 TB	ESA: Level 0, 1 and 2: Envisat generic format	ESA <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
A12	Meteosat – 1	EUMETSAT: Europe and North Africa	Start: 12/1977 End: 11/1979	Data has not been transcribed into EUMETSAT Data Centre			
A13	Meteosat -2	EUMETSAT: Europe and North Africa	EUMETSAT: Start: 08/1981 End: 08/1988	EUMETSAT Darmstadt Volume: 1.6 TB / year	EUMETSAT: Level 0: OpenMTP Level 1: OpenMTP * Level 2: OpenMTP * * plus other formats and a range of L2 products	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A14	Meteosat – 3	EUMETSAT: Europe and North Africa	EUMETSAT: Start: 08/1988	EUMETSAT Darmstadt Volume: 1.6 TB / year	EUMETSAT:	EUMETSAT: Discovery:	EUMETSAT: H. Rothfuss

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
		Atlantic Data Coverage Extended Atlantic Data Coverage	End: 01/1998 Start: 08/1991 End: 01/1993 Start: 08/1993 End: 05/1995		Level 0: OpenMTP Level 1: OpenMTP * Level 2: OpenMTP * * plus other formats and a range of L2 products	<a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	
A15	Meteosat – 4 METEOSAT Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa	EUMETSAT: Start: 07/1989 End: 02/1994	EUMETSAT Darmstadt Volume: 1.6 TB / year	EUMETSAT: Level 0: OpenMTP Level 1: OpenMTP * Level 2: OpenMTP * * plus other formats and a range of L2 products	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A16	Meteosat – 5 METEOSAT Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa Indian Ocean Data Coverage	EUMETSAT: Start: 05/1991 End: 07/1997 Start: 07/1998 End: 04/2007	EUMETSAT Darmstadt Volume: 1.6 TB / year	EUMETSAT: Level 0: OpenMTP Level 1: OpenMTP * Level 2: OpenMTP * * plus other formats and a range of L2 products	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A17	Meteosat – 6 METEOSAT Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa	EUMETSAT: Start: 10/1996 End: 01/2000 Rapid Scan – Europe: Start: 03/2000 End: 06/2007	EUMETSAT Darmstadt Volume: 1.6 TB / year	EUMETSAT: Level 0: OpenMTP Level 1: OpenMTP * Level 2: OpenMTP * * plus other formats and a range of L2 products	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A18	Meteosat – 7 METEOSAT Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa Indian Ocean Data	EUMETSAT: Start: 06/1998 End: 07/2006 Start: 11/2006	EUMETSAT Darmstadt Volume: 1.6 TB / year	EUMETSAT: Level 0: OpenMTP Level 1: OpenMTP * Level 2: OpenMTP *	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a> Ordering:	EUMETSAT: H. Rothfuss

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
		Coverage	- to date		* plus other formats and a range of L2 products	<a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	
A19	Metostat – 8 (MSG1) METEOSAT Spinning Enhanced Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa	EUMETSAT: Start: 01/2004 End: 09/2006  Rapid Scan – Europe: Start: 10/2006 - to date	EUMETSAT Darmstadt Volume: 20.4 TB / year	EUMETSAT: Level 0: Native Level 1: Native* Level 2: Native *  * plus other formats and a range of L2 products	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a>  Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A20	Metostat – 9 (MSG2) METEOSAT Spinning Enhanced Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa	EUMETSAT: Start: 07/2006 - to date	EUMETSAT Darmstadt Volume: 20.4 TB / year	EUMETSAT: Level 0: Native Level 1: Native* Level 2: Native *  * plus other formats and a range of L2 products	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a>  Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A21	Metostat – 10 (MSG3) METEOSAT Spinning Enhanced Visible and Infra-Red Imager	EUMETSAT: Europe and North Africa	N.A.	N.A.	N.A.	N.A.	TBD
A22	Metostat – 11 (MSG4) METEOSAT Spinning Enhanced Visible and Infra-Red Imager	Europe and North Africa	N.A.	N.A.	N.A.	N.A.	TBD
A23	METOP–A  Global Ozone Monitoring Experiment – 2 (GOME-2)	EUMETSAT and DLR:  Global	EUMETSAT: 2006 – to date  DLR: 2006 – to date	EUMETSAT; Darmstadt Volume: 0.1 TB (10, 11)  DLR: Oberpfaffenhofen Volume: 0.17 TB (Level 2)	EUMETSAT: Level 0: EPS native Level 1: EPS native*  * plus other formats on retrieval, e.g. HDF5	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a>  Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>  DLR: <a href="http://eoweb.dlr.de">http://eoweb.dlr.de</a>	EUMETSAT: H. Rothfuss  DLR: E. Mikusch

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
A24	METOP-A GNSS Receiver for Atmospheric Sounding (GRAS)	EUMETSAT: Global	EUMETSAT: Mar 2008 - to date	EUMETSAT Darmstadt Volume: 0.1 TB / year	EUMETSAT: Level 0: EPS native Level 1: EPS native*  *(plus other formats on retrieval, e.g. HDF5, BUFR)	EUMETSAT: Discovery: <a href="http://navigator.eumetsat.int">http://navigator.eumetsat.int</a>  Ordering: <a href="http://archive.eumetsat.int">http://archive.eumetsat.int</a>	EUMETSAT: H. Rothfuss
A25	METOP-B Global Ozone Monitoring Experiment - 2	N.A.	N.A.	TBD	TBD	TBD	TBD
A26	METOP-C Global Ozone Monitoring Experiment - 2	N.A.	N.A.	TBD	TBD	TBD	TBD
A27	SciSat Atmospheric Chemistry Experiment (ACE) Fourier Transform Spectrometer	CSA and ESA: Coverage of tropical, mid-latitude, and polar regions	CSA and ESA: 2003 - to date	CSA Volume: 12 TB (including FTS and MAESTRO)  University of Waterloo Volume: 55 TB  ESA: ESA: SSC Kiruna ESRANGE Volume: 0.36 TB in total SCISAT products  ESA ESRIN Frascati: Volume: 645 MB in total SCISAT products	CSA: raw ACE data in CCSDS format  University of Waterloo: Unpacked Level 0, Level 1 data and level 2 data products in ASCII format  ESA: Level 1, TBD Format	CSA: <a href="http://www.space.gc.ca">http://www.space.gc.ca</a> (for information only, data not available on-line)  <a href="https://databace.uwaterloo.ca/level2/">https://databace.uwaterloo.ca/level2/</a>  <a href="https://databace.uwaterloo.ca/validation/">https://databace.uwaterloo.ca/validation/</a>  (Access is currently restricted to people who have participated in the mission or have proposed a specific research product)  ESA: <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	CSA: C. Giguère  ESA: V. Beruti, M. Albani
A28	SciSat Measurements of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by	CSA and ESA: Coverage of tropical, mid-latitude, and polar regions	CSA and ESA: 2003 - to date	CSA: Volume: included above  University of Waterloo Volume: Included above	CSA: raw ACE data in CCSDS format  University of Waterloo: Data products in ASCII	CSA: Same as above  ESA: <a href="http://catalogues.eoportal.org/e">http://catalogues.eoportal.org/e</a>	CSA: C. Giguère  ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
	Occultation (MAESTRO)			ESA: ESA: SSC Kiruna ESRANGE Volume: 0.36 TB in total SCISAT products  ESA ESRIN Frascati: Volume: 645 MB in total SCISAT products	format  ESA: Level 1	<a href="#">oli.html</a>  <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	
A29	Odin Optical Spectrograph and Infra-Red Imaging System	SSC: TBD	SSC: TBD	SSC: Royal Institute of Technology Sweden Stockolm Volume: TBD	SSC: N0, N1A and N1B data	SSC:TBD	SSC: TBD
A30	Odin Submillimetre Radiometer	SSC: TBD	SSC: TBD	SSC: Royal Institute of Technology Sweden Stockolm Volume: TBD	SSC: N0, N1A and N1B data	SSC: TBD	SSC: TBD
A31	Parasol POLarization and Directionality of the Earth's Reflectances (PARASOL version)	CNES: Global	CNES: Mar 2005 – to date	CNES Toulouse Volume: 27 TB	CNES:  Level 0: archived  Level 1: archived  For both levels, specific format	CNES:  <a href="http://www.parasol-polder.cnes.fr">www.parasol-polder.cnes.fr</a>  <a href="http://www.icare.univ-lille1.fr">www.icare.univ-lille1.fr</a> (for others levels Aerosol and clouds)	CNES: M.Duplaa
A32	Megha-Tropiques Microwave Analysis and Detection of Rain and Atmospheric Structures	N.A. (Planned global in the tropical area)	N.A.	TBD	TBD	TBD	TBD
A33	Megha-Tropiques Sondeur Atmospherique du Profil'd'Humidite Intertropicale par Radiometrie	N.A. (Planned global in the tropical area)	N.A.	TBD	TBD	TBD	TBD
A34	Megha-Tropiques Scanner for Earth's Radiation Budget	N.A. (Planned global in the tropical area)	N.A.	TBD	TBD	TBD	TBD
A35	ADM-Aeolus Atmospheric Laser Doppler Instrument	N.A.	N.A.	TBD	TBD	TBD	TBD

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
A36	EarthCARE ATmospheric LIDar	N.A.	N.A.	TBD	TBD	TBD	TBD
A37	EarthCARE BroadBand Radiometer (EarthCARE)	N.A.	N.A.	TBD	TBD	TBD	TBD
A38	EarthCARE Cloud Profiling Radar (EarthCARE)	N.A.	N.A.	TBD	TBD	TBD	TBD
A39	EarthCARE Multi-Spectral Imager (EarthCARE)	N.A.	N.A.	TBD	TBD	TBD	TBD
A40	ROSA (on Oceansat-2)	ASI: Global	ASI: October 2009 – to date	ASI Matera Volume: TBD	ASI: Levels and format TBD	TBD	ASI: M.Calabrese
A41	ROSA (on SAC-D)	N.A.	N.A.	TBD	TBD	TBD	TBD
A42	GOSAT Thermal And Near infrared Sensor for carbon Observation - Cloud and Aerosol Imager	ESA: Global	ESA: Nov 2009 – to date	ESA: KSAT Tromso Volume: TBD TB	ESA: Level 1: Format NIES GOSAT	TBD	ESA: V. Beruti, M. Albani
A43	GOSAT Thermal And Near infrared Sensor for carbon Observation - Fourier Transform Spectrometer	ESA: Global	ESA: Oct 2009 – to date	ESA: KSAT Tromso Volume: TBD TB	ESA: Level 1: Format NIES GOSAT	TBD	ESA: V. Beruti, M. Albani

## 6. C5: OTHER SCIENTIFIC MISSIONS/SENSORS

### 6.1 Other Scientific missions/sensors. Table 1

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
F1	GOCE 3-Axis Electrostatic Gravity Gradiometer (EGG)	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 270 km Period: 90 mins Inclination: 96.7 deg Repeat cycle: 60 days LST: 6:00 Longitude (if geo): Asc/desc: TBD URL: <a href="http://www.esa.int/esaLP/ES_AYEK1VMOC_LPgoce_0.html">http://www.esa.int/esaLP/ES_AYEK1VMOC_LPgoce_0.html</a>	Mission: On-going Timeframe: Launch Date: 17 Mar 2009 Planned EOL Date: 30 Nov 2010 Instrument: Operational	Gravity instruments	N/A	Main objective to measure the 3 components of the gravity-gradient tensor (i.e. gradiometer data).
F2	GOCE GPS Receiver	Owner & Distributor: ESA	Same as above	Mission: On-going Timeframe: Launch Date: 17 Mar 2009 Planned EOL Date: 30 Nov 2010 Instrument: Operational	Precision orbit	N/A	Satellite positioning
F3	GOCE Laser Reflectors	Owner & Distributor: ESA	Same as above	Mission: On-going Timeframe: Launch Date: 17 Mar 2009 Planned EOL Date: 30 Nov 2010 Instrument: Operational	Precision orbit	N/A	Measures distance between the satellite and the laser tracking stations
F4	GOCE Laser retro- Reflector	Owner & Distributor: ESA	Same as above	Mission: On-going Timeframe: Launch Date: 17 Mar 2009 Planned EOL Date: 30 Nov	Precision orbit	N/A	Satellite Laser Ranging of GOCE, used for precise positioning and for geodynamics on GOCE

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				2010 Instrument: Operational			
F5	GOCE Satellite-to-Satellite Tracking Instrument (SSTI)	Owner & Distributor: ESA	Same as above	Mission: On-going Timeframe: Launch Date: 17 Mar 2009 Planned EOL Date: 30 Nov 2010 Instrument: Operational	Precision orbit	N/A	Measurements of low-frequency (coarse-scale) gravity field variations as well as highly precise positioning on GOCE
F6	SMOS Microwave Imaging Radiometer using Aperture Synthesis (MIRAS)	Owner & Distributor: ESA	Type: Sun-synchronous Altitude: 758 km Period: 100.075 mins Inclination: 98.445 deg Repeat cycle: 149 days LST: 6:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.esa.int/esaLP/ESAMBA2VMOC_LPsmos_0.html">http://www.esa.int/esaLP/ESAMBA2VMOC_LPsmos_0.html</a>	Mission: On-going Timeframe: Launch Date: 02 Nov 2009 Planned EOL date: 02 Nov 2012 Instrument: Operational	Imaging multi-spectral radiometers (passive microwave)	<b>Resolution Summary</b> 33 - 50 km depending on the position in the swath - resampled to 15 km grid <b>Swath Summary</b> Hexagone shape, nominal width 1050 km allowing a 3 day revisit time at the equator <b>Accuracy Summary</b> 2.6 K absolute accuracy, RMS 1.6-4 K depending on the scene and the position within the swath <b>Waveband Summary</b> L-Band 1.41 GHz MW	Objective is to demonstrate observations of sea surface salinity and soil moisture in support of climate, meteorology, hydrology, and oceanography applications
F7	SWARM Accelerometer	Owner & Distributor: ESA	Type: Inclined, non-sunsynchronous Altitude: 450 km Period: 90 mins Inclination: 87.4 deg Repeat cycle: LST: 6:00 Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.esa.int/esaLP/ESA3OZJE43D_LPswarm_0.html">http://www.esa.int/esaLP/ESA3OZJE43D_LPswarm_0.html</a>	Mission: Future Timeframe: Planned Launch Date: Mid 2012 Planned EOL Date: End 2016 Instrument: Not Operational	Precision orbit	<b>Resolution Summary</b> 0.1 nm/s <sup>2</sup> <b>Swath Summary</b> N/A <b>Accuracy Summary</b> overall instrument random error: <10-8 m/s <sup>2</sup> <b>Waveband Summary</b> N/A	Measurement of the spacecraft non-gravitational accelerations, linear accelerations range: +/- 2*10-4 m/s <sup>2</sup> ; angular measurement range: +/- 9.6*10-3 rad/s <sup>2</sup> ; measurement bandwidth: 10-4 to 10-2 Hz; Linear resolution: 1.8*10-10 m/s <sup>2</sup> ; angular resolution: 8*10-9 rad/s <sup>2</sup>
F8	SWARM Absolute Scalar Magnetometer	Owner & Distributor: ESA	Same as above	Mission: Future Timeframe: Planned Launch Date: Mid	Magnetic field	<b>Resolution Summary</b> 0.1 nT <b>Swath Summary</b> N/A <b>Accuracy Summary</b> 0.1 nT <b>Waveband Summary</b> N/A	Absolute calibration of Vector Field Magnetometer on board Swarm satellites

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
				2012 Planned EOL Date: End 2016 Instrument: Not Operational			
F9	SWARM Electric Field Instrument	Owner & Distributor: ESA	Same as above	Mission: Future Timeframe: Planned Launch Date: Mid 2012 Planned EOL Date: End 2016 Instrument: Not Operational	Space environment	<b>Resolution Summary</b> 0.3 mV/m <b>Swath Summary</b> N/A <b>Accuracy Summary</b> <3 mV/m <b>Waveband Summary</b> N/A	Suprathermal ion imager and Langmuir probe to measure ion temp, electron temp, ion density, electron density, spacecraft potential and ion incident angle
F10	SWARM GPSR (Swarm)	Owner & Distributor: ESA	Same as above	Mission: Future Timeframe: Planned Launch Date: Mid 2012 Planned EOL Date: End 2016 Instrument: Not Operational	Precision orbit	<b>Resolution Summary</b> L1 C/A code range error better than 0.5 m RMS; L1/L2 P-code range error better than 0.25 m RMS; L1 carrier phase error better than 5 mm <b>Waveband Summary</b>	N/A
F11	SWARM Laser Reflectors	Owner & Distributor: ESA	Same as above	Mission: Future Timeframe: Planned Launch Date: Mid 2012 Planned EOL Date: End 2016 Instrument: Not Operational	Precision orbit	N/A	Measures distance between the satellite and the laser tracking stations
F12	SWARM Star Tracker Set (3)	Owner & Distributor: ESA	Same as above	Mission: Future Timeframe: Planned Launch Date: Mid 2012 Planned EOL Date: End 2016 Instrument: Not Operational	Precision orbit	<b>Resolution Summary</b> <1 arcsec <b>Swath Summary</b> N/A <b>Accuracy Summary</b> < 3 arcsec pointing accuracy around all STR axes <b>Waveband Summary</b> N/A	Precise attitude determination from the combination of two or three star trackers

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
F13	SWARM Vector Field Magnetometer	Owner & Distributor: ESA	Same as above	Mission: Future Timeframe: Planned Launch Date: Mid 2012 Planned EOL Date: End 2016 Instrument: Not Operational	Magnetic field	<b>Resolution Summary</b> <0.1nT <b>Swath Summary</b> N/A <b>Accuracy Summary</b> <0.5 nT/15days <b>Waveband Summary</b> N/A	Magnetic field vector measurements
F14	CHAMP GPS TurboRogue Space Receiver (TRSR)	Owner: GFZ;  Agreement: DLR	Type: Inclined, non-sunsynchronous Altitude: 315 km Period: Inclination: 87 deg Repeat cycle: LST: Longitude (if geo): Asc/desc: N/A URL: <a href="http://www.dlr.de/champ">http://www.dlr.de/champ</a>	Mission: Ongoing Timeframe: Launch Data 15 Jul 2000 Planned EOL date: 31 May 2010 Instrument: Operational	Atmospheric temperature and humidity sounders	<b>Waveband Summary</b> MW (~1.0 cm - ~100 cm)	Temperature and water vapour profiles
F15	CHAMP STAR Accelerometer	Owner: GFZ;  Agreement: DLR	Same as above	Mission: Ongoing Timeframe: Launch Data 15 Jul 2000 Planned EOL date: 31 May 2010 Instrument: Operational	Gravity instruments	<b>Waveband Summary</b> MW (~1.0 cm - ~100 cm)	Earth gravity field measurements
F16	CHAMP Overhauser Magnetometer and Fluxgate Magnetometer	Owner: GFZ;  Agreement: DLR	Same as above	Mission: Ongoing Timeframe: Launch Data 15 Jul 2000 Planned EOL date: 31 May 2010 Instrument: Operational	Magnetic field	TBD	Earth magnetic field measurements
F17	GRACE BlackJack Global Positioning System (Turbo Rogue Space	Owner: NASA  Agreement: DLR, GFZ	Type: Inclined, non-sunsynchronous Altitude: 400 km Period: 94 mins Inclination: 89 deg Repeat cycle:	Mission: On-going Timeframe: Launch Date: 17 Mar 02	Precision orbit	high accuracy accelerometer and a geodetic qualified GPS receiver	Performs precise orbit determination, recover gravity data and to estimate the gravity field.

Ref Nr	Mission and Instrument	Mission Owners and Partners	Orbit details and URL	Mission and Instrument status and Timeframe	Instrument Type	Instrument Technical Characteristics	Instrument Measurements and Applications
	Receiver)		LST: Longitude (if geo): Asc/desc: TBD URL <a href="http://www.dlr.de/grace">http://www.dlr.de/grace</a>	Planned EOL Date: 30 Sep 11 Instrument: Operational			
F18	GRACE High Accuracy Inter-satellite Ranging System (aka K-band Ranging System)	Owner: NASA  Agreement: DLR, GFZ	Same as above	Mission: On-going Timeframe: Launch Date: 17 Mar 02 Planned EOL Date: 30 Sep 11 Instrument: Operational	Gravity instruments	<b>Resolution Summary</b> 400 km horizontal, N/A vertical <b>Swath Summary</b> N/A <b>Accuracy Summary</b> 1 cm equivalent water <b>Waveband Summary</b> Microwave: 24 GHz and 32 GHz	Inter-satellite ranging system estimates for global models of the mean and time variable Earth gravity field
F19	TerraSAR-X Orbit and Gravity Field	Owner: DLR	Type: Sun-synchronous Altitude: 514 km Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: 11 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.terrasar.de/">http://www.terrasar.de/</a>	Mission: On-going Timeframe: Launch Date: 15 Jun 2007 Planned EOL Date: 01 Jan 2013 Instrument: Operational			
F20	TerraSAR-X Atmosphere and Ionosphere	Owner: DLR	Type: Sun-synchronous Altitude: 514 km Period: 94.85 mins Inclination: 97.4 deg Repeat cycle: 11 days LST: 18:00 Longitude (if geo): Asc/desc: Ascending URL: <a href="http://www.terrasar.de/">http://www.terrasar.de/</a>	Mission: On-going Timeframe: Launch Date: 15 Jun 2007 Planned EOL Date: 01 Jan 2013 Instrument: Operational			

## 6.2 Other Scientific missions/sensors. Table 2

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
F1	GOCE 3-Axis Electrostatic Gravity Gradiometer (EGG)	ESA: Global	ESA: Mar 2009 – to date	ESA ESRIN Frascati Volume: 50 GB for all instruments	TBD	ESA: GOCE User Service Interface	ESA: V. Beruti, M. Albani
F2	GOCE GPS Receiver	ESA: Global	ESA: Mar 2009 – to date	ESA ESRIN Frascati Volume: 50 GB for all instruments	TBD	ESA: GOCE User Service Interface	ESA: V. Beruti, M. Albani
F3	GOCE Laser Reflectors	ESA: Global	ESA: Mar 2009 – to date	ESA ESRIN Frascati Volume: 50 GB for all instruments	TBD	ESA: GOCE User Service Interface	ESA: V. Beruti, M. Albani
F4	GOCE Laser retro-Reflector	ESA: Global	ESA: Mar 2009 – to date	ESA ESRIN Frascati Volume: 50 GB for all instruments	TBD	ESA: GOCE User Service Interface	ESA: V. Beruti, M. Albani
F5	GOCE Satellite-to-Satellite Tracking Instrument (SSTI)	ESA: Global	ESA: Mar 2009 – to date	ESA ESRIN Frascati Volume: 50 GB for all instruments	TBD	ESA: GOCE User Service Interface	ESA: V. Beruti, M. Albani
F6	SMOS Microwave Imaging Radiometer using Aperture Synthesis (MIRAS)	ESA: Global	ESA: Nov 2009 – to date	ESA Kiruna ESRANGE Volume: 5 TB	TBD	ESA: <a href="http://www.eopi.esa.int">www.eopi.esa.int</a> <a href="http://catalogues.eoportal.org/eoli.html">http://catalogues.eoportal.org/eoli.html</a> <a href="http://earth.esa.int/EOLi/EOLi.html">http://earth.esa.int/EOLi/EOLi.html</a>	ESA: V. Beruti, M. Albani
F7	SWARM Accelerometer	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani
F8	SWARM Absolute Scalar Magnetometer	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani
F9	SWARM Electric Field Instrument	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani
F10	SWARM GPSR (Swarm)	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani
F11	SWARM Laser Reflectors	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
F12	SWARM Star Tracker Set (3)	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani
F13	SWARM Vector Field Magnetometer	N.A. (planned as global)	N.A.	ESA: Infoterra Farnborough Volume: N.A.	TBD	TBD	ESA: V. Beruti, M. Albani
F14	CHAMP Orbit and Gravity Field	GFZ and DLR: Global	GFZ and DLR: 2000 - to date	DLR Neustrelitz (Level 0) Volume: 1.17 TB for all CHAMP Level 0 data  GFZ: (Levels 1, 2, 3, 4) Volume: 0.76 TB	DLR: Level 0: Instrument Source Packet  GFZ: Various formats	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling  GFZ: B. Ritschel
F15	CHAMP Magnetic and Electric Field	GFZ and DLR: Global	GFZ and DLR: 2000 - to date	DLR Neustrelitz (Level 0) Volume: 1.17 TB for all CHAMP Level 0 data  GFZ: (Levels 1, 2) Volume: 0.32 TB	DLR: Level 0: Instrument Source Packet  GFZ: Various formats	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling  GFZ: B. Ritschel
F16	CHAMP Atmosphere and Ionosphere	GFZ and DLR: Global	GFZ and DLR: 2000 - to date	DLR Neustrelitz (Level 0) Volume: 1.17 TB for all CHAMP Level 0 data  GFZ: (Levels 1, 2, 3) Volume: 6.03 TB	DLR: Level 0: Instrument Source Packet  GFZ: Various formats	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling  GFZ: B. Ritschel
F17	GRACE Orbit and Gravity Field	GFZ and DLR: Global	GFZ and DLR: 2002 - to date	DLR Neustrelitz (Level 0) Volume: 1.21 TB for all GRACE (-1/-2) Level 0 data  GFZ: (Levels 1a, 1b, 2) Volume: 0.92 TB	DLR: Level 0: Instrument Source Packet  GFZ: Various formats	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling  GFZ: B. Ritschel
F18	GRACE Atmosphere and Ionosphere	GFZ and DLR: Global	GFZ and DLR: 2002 - to date	DLR Neustrelitz (Level 0) Volume: 1.21 TB for all GRACE (-1/-2) Level 0 data  GFZ: (Levels 1, 2, 3) Not archived	DLR: Level 0: Instrument Source Packet  GFZ: Various formats	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling  GFZ: B. Ritschel
F19	TerraSAR-X Orbit and Gravity Field (based on 2-frequency GPS receiver)	DLR: Global	DLR: 2002 - to date	DLR Neustrelitz (Level 0) Volume: included in TerraSAR-X raw data stream (S8, 80 TB)	DLR: Level 0: Instrument Source Packet  GFZ:	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling  GFZ: B. Ritschel

Ref Nr	Mission and Instrument	Coverage of Available Data	Timeframe of Available Data	Archive Location and Current Volume of Archived Data	Archived Data (AIPs) Levels and Format	Data Set Access Approach and Links (e.g. access web site)	LTDP Contact Point
				GFZ: (Levels 1, 3) Volume: 0.37 TB	Various formats		
F20	TerraSAR-X Atmosphere and Ionosphere (based on 2 frequency GPS receiver)	DLR: Global	DLR: 2002 - to date	DLR Neustrelitz (Level 0) Volume: included in TerraSAR-X raw data stream (S8, 80 TB)  GFZ: (Levels 1) Volume: 0.06 TB	DLR: Level 0: Instrument Source Packet  GFZ: Various formats	GFZ: <a href="http://isdc.gfz-potsdam.de/">http://isdc.gfz-potsdam.de/</a>	DLR: K.-D. Missling GFZ: B. Ritschel

