KOMPSAT-1 Overview

- KOMPSAT-1 is in a sun-synchronous orbit with the following orbital parameters:
  - mass: about 500 kg
  - altitude: 685.13 km
  - velocity: 6.8 km/sec
  - inclination angle: 98.127 degree
  - Local time of ascending node: 10:50 a.m.
  - repeating ground track: 28 day
  - 180° phase difference with KOMPSAT-2

- The KOMPSAT-1 payload instrument, Electro-Optical Camera (EOC) provides 6 m panchromatic images:
  - PAN Channel (510nm - 730nm)
  - Swath 17 km
  - Across track ±45 degree;

Available since 1999 → European city dataset shortly via ESA…
KOMPSAT-2 Overview

- KOMPSAT-2 is in a sun-synchronous orbit with the following orbital parameters:
  - mass: about 800 kg
  - altitude: 685.13 km
  - velocity: 6.8 km/sec
  - inclination angle: 98.127 degree
  - Local time of ascending node: 10:50 a.m.
  - repeating ground track: 28 day
  - 180° phase difference with KOMPSAT-1

- The KOMPSAT-2 payload instrument, Multi-Spectral Camera (MSC) will provide the 1m panchromatic image and 4m multi-spectral image with four bands:
  - PAN Channel (500nm - 900nm)
  - MS Channel
    - MS 1: 450nm - 520nm
    - MS 2: 520nm - 600nm
    - MS 3: 630nm - 690nm
    - MS 4: 760nm - 900nm

→ Launch expected for Nov 2005, Agreement with ESA under discussion
In order to evaluate KOrea Multi-Purpose SATellite (KOMPSAT) application products and develop the multi-sensor data application technologies, the product validation site will be established by Korea Aerospace Research Institute (KARI).

However, high resolution mapping for forest type and vegetation index, sometimes hyper-spectral data are needed such as the Compact High Resolution Imaging Spectrometer (CHRIS) data.

Project for On Board Autonomy (PROBA) CHRIS data will be used to generate the high spatial and high spectral resolution thematic maps and develop the multi-sensor data processing algorithms with KOMPSAT data.

Also, CHRIS hyper-spectral data will be used to evaluate KOMPSAT application products such as land-cover/use classification, high resolution mapping, etc.
Establishment of Product Validation Site

- Atmospheric modeling (MODTRAN-4)
- Ground Control Points & Digital Surface Model DB
- Radiometric Tarps
- Topographic DB (land-use map, digital map, forest type map, soil map, etc)
- In-situ measurement
- Sky radiometer
- Spectroradiometer (GER-3700)
- GPS (Pathfinder pro-XR)
- Atmospheric modeling (MODTRAN-4)

Ground Control Points & Digital Surface Model DB
Multi-sensor Data Acquisition

In-situ measurement during the satellite overflight

KOMPSAT-2 MSC data (PAN&MS)  PROBA CHRIS hyper-spectral data
Product Validation Activities

- Forest Type Map
- Land-Cover Map
- Land-Use Map

Generation of Thematic Maps using KOMPSAT-2 MSC Data

PROBA CHRIS Data & In-situ Measured Data

To evaluate KOMPSAT data application products

... etc.
Development of Multi-sensor application Technologies

- Merged Products PROBA- KOMPSAT for
  - Disaster Monitoring
  - High Resolution Mapping
  - Combination of high spatial and high spectral resolution

- To test and develop the multi-sensor data processing algorithms with KOMPSAT-2 MSC data.

- Analysis of spectral characteristic in test site, Korea using PROBA CHRIS hyper-spectral data.