

Sentinel-1 Session

Seed Questions and Recommendations

1. ***What recommendations does the community have for Sentinel-1 observation scenarios over InSAR areas of interest, in terms of revisit frequency and pass (ascending / descending)?***
 2. ***What recommendations does the community have for Sentinel-1 data acquisition, in terms of instrument mode and polarization? Can the community confirm that the IWS is the most appropriate mode for most InSAR applications and related areas? In which cases dual polarization data would bring real added-value (knowing that single polarisation may allow to extent coverage / frequency of observations) ?***
- **Over critical areas requiring frequent observations (tectonic / subsidence / landslides / volcanoes), the capability of short repeat cycle of Sentinel-1 should be fully exploited, and acquisitions in both ascending and descending orbits should regularly be performed. The details need to be analysed based on the available mission and system resources – more information in the recommendations of the thematic sessions**
- **The IWS mode is the default mode of Sentinel-1 over land and the suitability of this mode is confirmed by the InSAR community to a large extent (some exceptions...)**
- **See specific recommendations from thematic sessions regarding the polarisation. On the single / dual polarisation issue: if a choice has to be made due to mission/system resources limitations, the mapping extent in single polarisation should be privileged vs the use of dual polarisation.**

- 3. *What recommendations does the user community have for the systematic processing of Sentinel-1 data acquired over InSAR areas of interest ? e.g. in terms of timeliness ? any InSAR processing steps that could be performed within the ground segment to support the community? potential hosted processing ?***
- 4. *What recommendations does the community have for easing the access to the huge Sentinel-1 data volume for the InSAR community? What potential collaborative interfaces to facilitate data access within the InSAR user community would be recommended?***
- 5. *Is the community ready to handle the huge volume of Sentinel-1 data products, from download to processing? Are the 250 km swath IWS products opening new InSAR applications for which specific access mechanisms should be foreseen ?***

Above issues not really discussed at the Sentinel-1 dedicated session, however:

- The ESA plans are to basically process systematically within 1 day all data in SLC for some InSAR relevant areas (details / areas are to be defined based on available system resources and performance).**
- Considering the huge volume of Sentinel-1 generated data, redistribution of standard Sentinel-1 products by international partners could ease the data access worldwide**
- The amount of Sentinel-1 data to be dealt with of course depends on the application. Use of Sentinel-1 based InSAR for large scale mapping (e.g. Antarctica) or for very frequent monitoring of areas requires the set up of adequate infrastructure on the user side.**

6. *What recommendations does the community have regarding the cooperation between Sentinel-1 and RCM (Radarsat Constellation Mission from Canada), in particular regarding the complementarity of the respective observation scenarios ?*

Above point not discussed at the Sentinel-1 dedicated session, however:

- Cooperation between ESA and CSA on the Sentinel-1 / RCM aims at increasing the benefit for users and synergies should be exploited**
- Even if it will not be possible to perform InSAR across the 2 missions, detailed discussions on complementary S-1 / RCM observations will take place in the coming months / years between ESA and CSA**
- RCM could be used e.g. in complement of Sentinel-1 for applications requiring data of higher resolution or with the same geometry as Sentinel-1 (e.g. for landslides)**
- Cooperation across SAR missions on international activities (e.g. IPY) shall be continued in the S-1 / RCM era.**