



The European Space Agency's EO Campaigns Activities

R.Bianchi

European Space Agency, EO Science & Applications Department, Mission Science Division,
ESRIN, Italy

The main objective of Earth Observation Campaigns is to provide support for the preparation of future space programmes and their users. The programme of campaign activities includes support for experiments related to atmospheric dynamics, atmospheric chemistry, coasts and oceans, ice and the land.

During the last 30 years about 60 Earth Observation campaigns have been conducted including ground-based, air-borne, balloon-borne, ship-borne and small satellite experiments. These were initiated in support of future mission development and of validation of missions in orbit. It is now well established that these activities constitute essential elements of Earth Observation missions.

Earth Observation campaigns in support of future mission development have technological, geophysical and simulation objectives. They include data acquisition using a broad range of active and passive instrumentation in both the optical and microwave portion of the electromagnetic spectrum such as lidar, synthetic aperture radar, limb sounding spectrometers, imaging spectrometers and radiometers.

Furthermore, exploitation projects need validation for the assessment of the quality of the application products and of the service provision. For this, similar techniques are required as for satellite commissioning including in-situ measurements (using ground-based, airborne and balloonborne instruments), data assimilation and satellite inter-comparison with dedicated campaigns using sensors with higher resolution than current operational satellites being of particular interest.

Many of the requirements for campaigns come from ESA advisory groups supporting current missions in orbit as well as future missions and the Agency does not normally conduct a campaign in isolation but seeks collaboration with national research organisations in the ESA member states as well as with international organisations. There are two main reasons for this. Firstly it has always a strategic objective to harmonise European campaign activities and avoid duplication of effort between international organisations and national research programmes. Secondly, the financial constraints of ESA's campaign programme have imposed collaboration, taking advantage of projects initiated and funded by external partners.