

## SYSIPHE hyperspectral imager set to define the defense systems of tomorrow

The delivery by ONERA of the French part of SYSIPHE (*SYstème Spectro Imageur de mesure des Propriétés Hyperspectrales Embarqué* - onboard spectral imaging system for measuring hyperspectral properties) to the DGA, the French Armaments Procurement Agency, marks the start of a new phase with the launch of an evaluation in operational conditions. The results of this will ultimately help to define the reconnaissance systems of the future.



The SYSIPHE program enters a new phase this week with the launch of an evaluation in operational conditions of the high spatial and spectral resolution spectral imaging system. This new contract, running over 4 years, will involve evaluating the SYSIPHE system in scenarios defined with defense requirements in mind: detection of targets even when camouflaged, distinguishing decoys, etc.

Two airborne campaigns are planned on the Canjuers military site (Var department). They will enable the acquisition of the latest global state-of-

the-art hyperspectral images, and serve to demonstrate what this technology has to offer in the fields of detection, reconnaissance and identification.

ONERA is in charge of running the SYSIPHE program on behalf of the DGA. As such, it has designed and supplied the French SIELETTERS instrument and the STAD data processing system. It also coordinates the other participants in the program such as Germany (DLR) and Norway (NEO). Lastly, specific bilateral agreements between France and Norway will enable ONERA to offer SYSIPHE to the civil and military communities both nationally and internationally.

### Key information

- Very high spatial resolution: 50 cm = 1 pixel over a 500m-wide swathe
- Very high spectral resolution: over 500 spectral bands
- Airborne campaign at 2000 m (6500 ft) altitude from a Dornier DO-228 aircraft (DLR)
- SYSIPHE comprises:
  - the SIELETTERS instrument for thermal infrared detection (France, ONERA)
  - the HYSPEX ODIN for the visible spectrum (Norway, NEO)
  - the STAD data processing system (France, ONERA)
- Dedicated podcast: <http://www.onera.fr/fr/podcasts/laurent-rousset-rouviere-sysiphe>

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