**Visualisation and processing support of uncertainties
in SNAP - ESA's Sentinel Toolbox**

Carsten Brockmann1, Norman Fomferra2, Peter Regner3

Early 2014 ESA kicked off the new toolbox development for the Sentinel-3 satellite optical mission, supporting OLCI and SLSTR. Like the parallel developments for Sentinel 1 and 2, the Sentinel 3 Toolbox is based on an evolution of the BEAM development platform. This common platform is called SNAP – SentiNel Application Platform.

The Sentinel-3 Toolbox will include generic function for visualisation and analysis of Sentinel 3 OLCI and SLSTR data, as well as specific processing tools such as cloud screening, water constituent retrieval and SST retrieval. The Toolbox will put emphasis on access to remote in-situ databases such as Felyx or MERMAID.

Sentinel data products contain uncertainty quantification for every variable they contain, at per pixel level. For example, in the case of OLCI there will be an uncertainty for the TOA radiances or the chlorophyll concentration. SNAP provides special and novel visualisation tools to support the interactive analysis of the uncertainty, and supports error propagation in its numerical processing tools. The SNAP development is carried out as an agile process, and new requirements can be taken onboard. Since exploitation of uncertainty information is a dynamically evolving field of research, the SNAP developers are very open to discussion and recommendations.

The development of SNAP will be performed in close cooperation of the development teams of all three Sentinel toolboxes in a developer forum. External partners, like the NASA OBPG group (SeaDAS) participate also in the developer forum.

The Sentinel 3 Toolbox Development is funded through the ESA SEOM Programme.

1 carsten.brockmann@brockmann-consult.de, Brockmann Consult GmbH, Max-Planck-Str. 2, 21502 Geesthacht, Germany

2 norman.fomferra@brockmann-consult.de, Brockmann Consult GmbH, Max-Planck-Str. 2, 21502 Geesthacht, Germany

3 peter.regner@esa.int, ESA ESRIN, Via Galileo Galilei, 00044 Frascati, Italy