ESOV NG Version 2.0 - Release Notes

1. NEW RELEASE DESCRIPTION

1.1 Software and Hardware Requirements

The ESOV NG v2.0 software is available for the following computer platforms:

- Windows XP / Vista / 7 (32-bit)
- Mac OS X PowerPC 10.4 or above (32-bit)
- Mac OS X Intel 10.4 or above (32-bit)
- Mac OS X Intel 10.5 or above (64-bit)
- Linux (32-bit & 64-bit)

The ESOV NG software requires:
- A version 1.5 (update 12 or higher) of the Java Development kit (JDK). It is already included in the ESOV NG package for Windows and Linux.
- 150+ Mb of hard disk space
- 512+ Mb RAM
- It is advised to have at least 1024 x 786 resolution display

1.2 Installation Executables

An ESOV NG distribution consists of one installer file for each supported computer platform:

	32-bit	64-bit
Mac OS X Intel	EsovNG_macintel32_2_0.dmg	EsovNG_macintel64_2_0.dmg
Mac OS X PowerPC	EsovNG_macppc32_2_0.dmg	-
Linux	EsovNG_linux32_2_0.sh	EsovNG_linux64_2_0.sh
Windows	EsovNG_windows_2_0.exe	-

1.3 Installation Hints

The installation of the ESOV NG will be guided though an *Install4j* installation wizard.

- Windows 32-bit:
Run the executable installer *EsovNG_windows_2_0.exe*. Follow the instructions displayed by the installation wizard.

- Mac OS X PowerPC 32-bit / Mac OS X Intel 32-bit / Mac OS X Intel 64-bit:
Unpack the disk image *EsovNG_macppc32_2_0.dmg / EsovNG_macintel32_2_0.dmg / EsovNG_macintel64_2_0.dmg* by double-clicking it in a Finder window. A new Finder window will be opened, showing the package 'ESOV NG Installer'. Double-click the installer package and follow the instructions displayed by the installation wizard.

Important note: In case you experience a a Java exception or a wrong architecture message when launching the Esov NG application, please follow the steps below:
- Go to the Esov NG installation folder
- Right-click on the 'esovng' file and select 'Get Info'

- The information window opens, where you might see the option 'open in 32-bit mode'. If so, select this option.
- Launch the application

- <u>Linux 32-bit / Linux 64-bit</u>:
Simply run the shell script *EsovNG_linux32_2_0.sh / EsovNG_linux64_2_0.sh* and follow the instructions displayed by the installation wizard. Note that you may have to set execution permission with the command:
```
sudo chmod a+x EsovNG_linux32_2_0.sh
```
or
```
sudo chmod a+x EsovNG_linux64_2_0.sh
```

Note that the ESOV NG installer will overwrite installation folders of previous versions if the application is installed in the same directory. Please remember to backup your own data files in case they are stored in the installation directory.

2. <u>NEW FUNCTIONALITIES</u>

The ESOV NG application has been developed in Java with the objective of improving and modernising the existing ESOV Classic tool. In particular, the ESOV NG application provides the following improvements with respect ESOV Classic:

- It replaces the platform dependent GUI implementation used in Esov Classic (X11 for UNIX-based platforms and MFC/C++ for Windows) by a user interface module developed using Swing and the JIDE Docking and Action Frameworks (JIDE 1.9.4).
- A new rendering engine has been implemented using GeoTools 2.3.
- The swath calculation component is using a JNI-based wrapper for the Earth Explorer CFI libraries instead of the Envisat CFI software integrated in Esov Classic.
- The object-oriented architecture and thread-safe API of the ESOV NG software tool allows multiple sessions corresponding to different satellites to be started
- All the input, output and configuration data files used in ESOV NG are XML files
- It is possible to use a command-line interface for swath computations, allowing batch processing

This new release provides the following new functionalities with respect to v1.6.3:

- Tools
    - A tool is available to compute and display in a 2D graph the topocentric azimuth and elevation from a given location on the map (user-selected point or groundstation) towards the satellite for a given time range.
    - A tool is provided to merge several single scenarios into a multi-satellite scenario. The merged scenario contains all the graphical elements from original scenarios overlaid. It is possible to filter the time segments based on a time interval.

    These functionalities are available from the "Tools" menu on the main menu bar.

- Mission support
    - Add additional spacecrafts and their instrument swaths to the distribution package: ENVISAT_2010+
    - Updated orbit definition for SEOSAT
    - Updated instrument swaths for SENTINEL-1

- - Instrument swath for MSI added to SENTINEL-2

- GUI and style modifications:
    - New default layout of the tool windows: Style tool window arranged between the Layer Manager and the Instruments tool windows (see 'Hints and Tips' in section 4.3)
    - If the style of the segments is changed, a window pops up to warn the user that the style of the individual segments is lost after recomputation. To block the warning window please select the option 'Do not show this message again'.
    - The opacity is an editable field where the percentage value can be typed (instead of use of slider)
    - If station perimeter is filled, the colour of the station location point and label are inverted with respect to the perimeter fill colour.
    - New desktop icon and splashscreen

- Application folders:
    - The 'orbit_scenario_files' directory has been removed. The latest orbit files can be found at http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/ (see details in section 4.1)

- Porting to 64-bit for Mac Intel and Linux

3. CLOSED SPRS

The following SPRs have been closed:

- ESOVNG-AN-146: In the style window, after moving the opacity slider it is necessary to click on another field within the style window to apply the change.
- ESOVNG-AN-190: SCF is not recognized if file extension .SCF (uppercase). Also no message is shown when scf filename does not correspond to an existing instrument.
- ESOVNG-AN-198: In instrument tool window, it should not be possible to select (highlight) the orbit / instrument name
- ESOVNG-AN-206: The style toolwindow should be neutral unless some element is selected in the Layer Manager
- ESOVNG-AN-230: The layout is lost after loading a saved EsovNG scenario file.
- ESOVNG-AN-239: It is not possible to open a Esov NG scenario file containing segments from SCF files.
- ESOVNG-AN-242: The Date is not correctly filled in orbit settings panel after loading EsovNG scenario file with OSF
- ESOVNG-AN-255: Error: Failed to calculate segments: null (java.lang.NegativeArraySizeException) when selecting / deselecting OSF
- ESOVNG-AN-256: Zooming on a selected rectangle area from longitude -180 deg and going across the Greenwich meridian results in wrong zoomed area
- ESOVNG-AN-261: Esov NG returns an error if the requested orbit interval includes the last orbit of one of the OSF orbital changes and we compute the segments with an station or zone

4. **ADDITIONAL COMMENTS AND KNOWN PROBLEMS**

4.1 **Mission Support**

- CRYOSAT2 mission support
    - The latest long term Predicted orbit file (POF) and Orbit Scenario file (OSF) can be found in the EOP System Support web server, under
    http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/CRYOSAT2/

- ENVISAT mission support
    - The last Orbit Scenario file (OSF) from the Envisat Nominal Phase can be found in the EOP System Support web server, under
    http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/ENVISAT/

- ENVISAT_2010+ mission support
    - The latest Orbit Scenario file (OSF) for the Envisat Extended Phase can be found in the EOP System Support web server, under
    http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/ENVISAT_2010+/

- SMOS mission support
    - The latest Orbit Scenario file (OSF) can be found in the EOP System Support web server, under
    http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/SMOS/LATEST_OSF/
    - Possibility to add the ISEA grid as a layer. An additional package 4Hx-shapes.zip containing the data has to be downloaded from the EOP System Support web server
    http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/SMOS/ISEA_GRID/
    unzipped and the contents of the resulting "4Hx-shapes" folder copied into the application installation directory
    ./Esov NG/resources/geodata/shapes/
    Note that the size of the expanded .zip file is approx. 4.4 GB.

- Sentinel-1/2/3 mission support
    - Test Orbit Scenario file (OSF) for Sentinel-1/2/3 can be found in the dedicated folders in the EOP System Support web server, under
    http://eop-cfi.esa.int/esovng_distribution/AUX_DATA/

4.2 **Known Problems**

The current ESOV NG release has de following limitations:

- Functionalities that are not available:
    - DRS visibility computation is not supported

Users that make use these functionalities are advised to continue working with Esov Classic.

- Open anomalies:
    - ESOVNG-AN-051: Command line interface in Windows is not fully functional

- ESOVNG-AN-176: PDF and PostScript output files contain only an image and not vectorial data
- ESOVNG-AN-218: <Orbit_Settings> structure in file exports (SCF/LLF/UTF) not correct when using POF/ROF
- ESOVNG-AN-219: The application displays the complete segment if SCF contains a single segment (across orbits) and #Orbits=1
- ESOVNG-AN_221: When using a POF, if SCF is loaded and 'No' is selected in the dialog window (use current orbit settings) the displayed segments are wrong
- ESOVNG-AN-245: A zone across the 180 meridian is not displayed correctly. The exported image is not complete.
- ESOVNG-AN-264: On certain Linux configurations a Java exception window appears when computing segments and changing scopes. However, after clicking OK on the error message window, the results are displayed.

4.3   Hints and Tips

- If your system has a previous installation of ESOV NG you may not see the new default layout. In case you want to use it, just go to the user application directory (see Section 2.5.2 in User Manual), rename (or remove) the existing file myLayout.layout and launch again ESOV NG.

- If for any reason the tool windows do not appear in the main window frame, you can restore the default layout by selecting "Window → Reset Layout"

- In order to import a LLF or UTF file export type .csv using a spreadsheet application, load it as external data and select 'semicolon' as delimiter. To correctly import the decimal seconds in the UTC time, you just need to customize the cell format to hh:mm:ss.000

- It is possible to display ESRI shapefiles. The "shapefile" must consist of the following physical files:
    - *.dbf - attributes in dBase format
    - *.prj - the projection
    - *.shp - the geometry data
    - *.shx - the geometry indices

  The user shapefiles have to be stored in the folder "user_shape_files", under the application directory (see Section 2.5.2 in ESOV NG User Manual) prior to launch ESOV NG. The contents of this folder are scanned at start-up and the list of detected shapes is shown under the 'User Shapes' entry in the Layer Manager. Then, a new entry 'User shapes' appears in the Layer Manager.

- Please check the ESOV NG user manual for further information.

5. REPORTING PROBLEMS

For any problems or questions please send an e-mail to the ESOV NG helpdesk:
esov@jw.estec.esa.nl