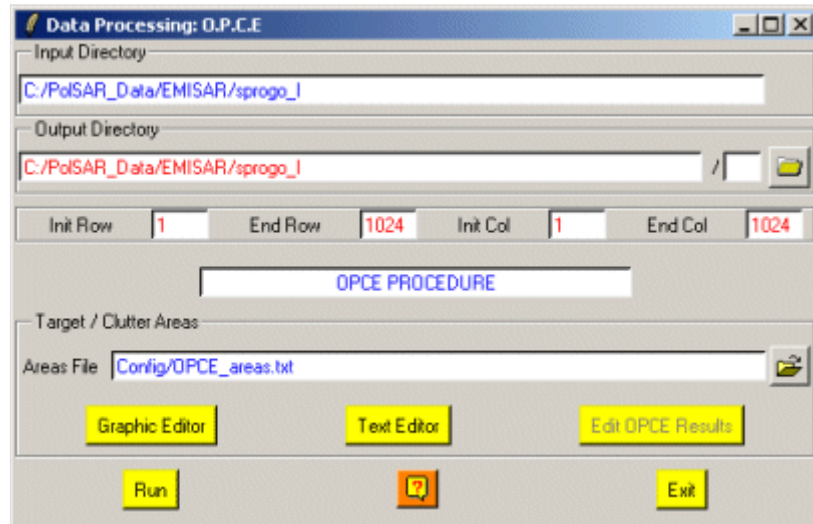




## O.P.C.E



### Description:

This program creates binary and bitmap image files resulting from the Optimisation of the Polarimetric Contrast Enhancement (OPCE) on two areas of interest (target / clutter) selected by the user.

The proposed OPCE procedure solves the optimisation problem using the Sequential Unconstrained Maximisation Technique (SUMT) and the formula of the optimal contrast polarisation state in the matched polarised channel (J. Yang, Y. Yamaguchi, W.M. Boerner).

### Comments:

Parameters written in Red can be modified directly by the user from the keyboard.

### Input/Output Arguments:

<b>Input Directory</b>	Indicates the complete location of the considered <b>Main Directory (MD)</b> containing the [S2] matrix data to be processed.
<b>Output Directory</b>	Indicates the location of the processed data output directory. The default value is set automatically to : <b>Main Directory (MD)</b> .

### Output Image Number of Rows/Columns:

The output image numbers of rows and columns are initialised to the input data set dimensions.

Users wishing to process a sub-part of the initial image can modify the **Init** and **End** values of the converted images rows and columns.

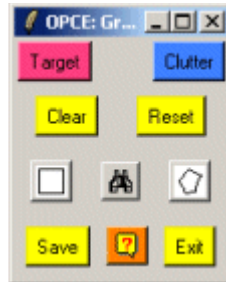
Note: init and end values have to remain within the range defined by the input image

dimensions.

### Target/Clutter Areas:

Target and Clutter areas may be defined by the way of a graphic interface or a text editor.

The graphic interface permits to delimitate areas by defining regions of interest on a visual representation of the data to be processed.



Note: See the [OPCE Graphic Editor Help](#) file for a precise description of all the different functionalities.

Users wishing to define target and clutter areas from specific coordinates may first save a temporary `OPCE_areas.txt` and modify it according to their needs using the training area text editor.

### Output Files:

Once target and clutter areas are defined, the OPCE program collects the coordinates of each training area, computes each area center matrix, solve the optimisation problem, then save the optimal transmit / receive polarisation states, the initial Target power, Clutter power, contrast and the final and optimised Target power, Clutter power and contrast.

The OPCE procedure output files are :

- [MD / OPCE.bin](#)
- [MD / OPCE\\_db.bmp](#)
- [MD / OPCE\\_results.txt](#)

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### OPCE Procedure Steps:

- **1** : Select the Output Directory.
  - **2** : Select the Output Image Number of Rows/Columns.
  - **3** : Enter the name of the Target/Clutter Areas list text file.  
The default output file name is set to `./ Config / OPCE_areas.txt`.
  - **4** : Run Graphic Editor to define graphically the Areas of Interest (AoI).  
or run Text Editor to enter the coordinates of the Areas of Interest (AoI)  
in the Training Areas text file.
  - **5** : Run the OPCE procedure.
  - **6** : Edit the results of the OPCE procedure.
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