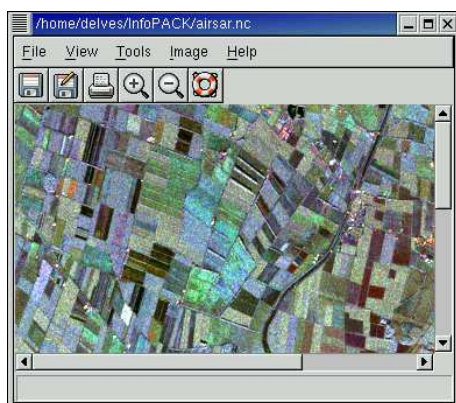


**NAS** Software Limited  
Incorporating InfoSAR

## InfoPACK Knowledge from Data



An AirSar Polarimetric SAR Image

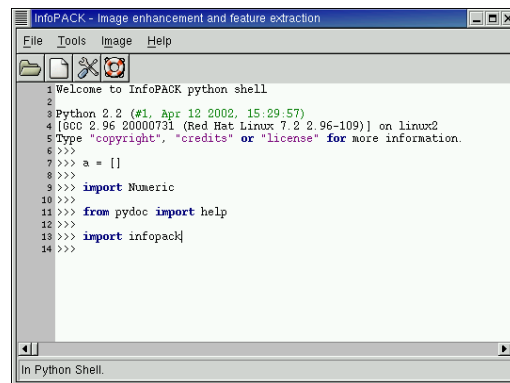


Region Edges found using InfoPACK

### InfoPACK: SAR made easy

InfoPACK is a standalone package providing state of the art SAR image understanding algorithms together with an easy to use GUI, image viewer, and versatile scripting language based on Python, making applications

development easy and fast. Both point-and-click and command line access to the routines are available.



An InfoPACK Screenshot

### NASoftware Limited

NASoftware Ltd provides:

**Consultancy** in Remote Sensing applications, particularly in the areas of Synthetic Aperture Radar and associated techniques. NASoftware staff have an international reputation, over forty manyears experience, in these techniques.

**SAR Image Understanding Software** incorporating the advanced algorithms developed by company staff in collaboration with academic colleagues. InfoPACK is the product of an extensive development program to implement these algorithms in a form which is as easy to use as possible.

**Training** in SAR image formation and image understanding techniques, and their use in remote sensing applications. We can provide hands-on training in a range of subjects (including InfoPACK training) in our own training workshop or at customer premises.

# Technical Details

## The InfoPACK High Level Library

Central to **InfoPACK** is **InfoLIB**: a high level library of routines for SAR image understanding implementing specially developed algorithms optimised for SAR data and, we believe, unmatched in quality of output. The routines optimise memory useage and can handle arbitrarily large images.

**InfoLIB** is implemented in C and routines may be called from standalone programs; from **InfoPACK** scripts; or via the **InfoPACK** GUI.

Topics covered include:

- Speckle Reduction
- Intensity Segmentation (single image; multitemporal; multipolarisation)
- Texture Segmentation
- Segmentation Postprocessing
- Classification (supervised and unsupervised)
- Edge detection (ab initio and from a prior segmentation)
- Small Target detection (CFAR-based)
- Target Change detection
- Large Area Change detection
- Data Fusion capabilities for each of the above (e.g. SAR/optical)

## The InfoPACK Low Level Library

This provides basic facilities including

- Import/Export facilities (based on extensions to the *GDAL* library)  
The **InfoPACK** internal format is *netCDF*. A wide range of other image formats is accepted, and facilities for importing/exporting raw data are also provided.
- Standard image filters, including Mean, Blacknell-Tough, Gamma order, K order, Equivalent Number of Looks (ENL), Median, Determinant.
- Image Arithmetic, including add, subtract, multiply, square, square root, log.
- A wide range of SAR-oriented extensions to the base scripting language.

## The InfoPACK GUI

The **InfoPACK GUI** provides an easy-to-use point and click framework from which **InfoPACK** routines and scripts can be written, edited, and run, and results inspected. Included are:

**Menu-driven Access** to all the major routines and facilities. Input images and routine parameter settings are prompted for, with defaults.

**Console:** with interactive running of single commands or scripts if preferred.

Facilities accessed from the toolbar menus report progress in this window in a form which makes script development very easy using cut and paste.

**Scripting Language** A fully-featured scripting language based on Python and Numeric Python, with SAR-specific extensions, is provided. Features include conditionals; loops; named procedures (scripts); I/O including image I/O; datatypes and arrays.

**Image Viewer:** the OpenEV viewer, providing excellent handling of large images and a range of built-in image manipulation facilities.

**Editor:** Based on the *Idle* editor, and providing full language-sensitive editing facilities for **InfoPACK** scripts.

## How To Order

To order, or to receive more information on our product range and availability, see us on the Web at <http://www.nasoftware.co.uk>, or contact:

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