

1. GOF C Scenario.

Brief description.

Working in a distributed environment, a User wishes to create a product in the ESA FIRE ATLAS ASCII format combining MODIS and ATSR global fire products.

Inconsistencies (i.e., fires detected by one instrument but not the other) are further investigated using fine grain coverage such as from Landsat. A merged product of fire point spatial/temporal coordinates and other metadata is produced based on validation results and registered through the GOF C Portal for use by the GOF C community.

Preconditions.

The User accesses various Geographic Information Services using "thin" client software located on the User's hardware. The User has access to a network over which the Services are accessed. Financial transactions and User authorization issues are ignored in this scenario. The User (or the User's client software) knows the network location of a Catalogue Service for Geographic Data and Services. The User is familiar with coverage data and OGC Web Services. The User is familiar with MODIS Fire related products and algorithms.

Actors/Roles.

User – Consumer of Data.

Catalog Service – A service for locating and describing data and services of interest.

Provider – A producer/archive/broker that will supply services and data remotely.

Reprojection service – A location independent service for transforming the projection or. Gridding of a data product instance.

WMS,WCS,WFS – OGC Web Services.

Detailed Steps.

- 1) The User accesses a Catalogue Service to search for MODIS and ATSR Fire regional and global products with the appropriate timeframe and geographic boundaries.
- 2) The User discovers several data providers that have the required data holdings.
- 3) The User accesses the Catalog Service to discover the services provided by each provider and selects a provider that has all the required holdings and provides subsetting and reprojection/regridding services.
- 4) The User investigates the available MODIS fire products and chooses the 8 day MOD 14A2 product because of the product size and the maximized confidence of fire detection.
- 5) The User makes a WCS service request to the data provider for the MOD14 A2 fire product, specifying geographic region and time period, and requests projection into Goode's Interrupted Homolosine projection grid.

- 6) The User makes a WFS service request for the ATSR World Fire Atlas Active Fire Product specifying geographic region and time period desired.
- 7) The User receives the MODIS 14A2 products in HDFEOS format from the data Provider WCS, and finds the product satisfactory.
- 8) The User receives the ATSR World Fire Atlas results in XML from the ATSR data Provider, and finds the product satisfactory.
- 9) The User uses the HDFEOS libraries on his machine to transform the MODIS pixels and fire map confidence levels into the Lat,Long fire atlas points. The User transforms the MODIS product into XML which conforms to an extension of the World Fire Atlas XML schema which includes elements for instrument type (MODIS or ATSR) and confidence level if MODIS.
- 10) The User correlates the locations of fires identified by the two products. The User identifies several instances where only one product identifies a fire event at a location.
- 11) The User accesses a Catalog Service to search for high resolution data immediately before and after the fire events in question.
- 12) The User finds a Landsat data provider that has the required data holdings.
- 13) The User makes a service request to the Landsat Provider WCS to acquire the Landsat data, ALTERNATIVE: If Landsat browse is adequate for validation the User makes a WMS request the Landsat data provider for the appropriate Landsat browse images.
- 14) The User reviews the verification data product, determines the disposition of the questionable fire events, and creates the final composite product and documentation.
- 15) The User registers his product, the associated XML Schema Feature descriptions and his process descriptions at the GOFC Portal and posts an announcement of the availability and requests comments from colleagues.