



1 NEODC ARSF AZ utilities service usage primer

1.1 Introduction

The NERC Earth Observation Data Centre has developed and installed the AZ utilities service on the ESA SSE Portal to provide the ability for users to use the software on NERC Airborne Research and Survey Facility (ARSF) ATM and CASI data. The AZ software is available for download and operation on LINUX systems from the NEODC data browser (http://www.neodc.rl.ac.uk/cgi-infrastructure/data_browser/data_browser/neodc/arsf/Software).

This service should be of use to users who need to extract, geocorrect and orthorectify ATM and CASI data but have no access to a LINUX system. This service may also be used for training purposes for users to familiarise themselves with the AZ software suite. This service provides a limited functionality and we advise advanced users to download the software and use the LINUX command line functionality.

1.2 Service user requirements

In order to use this service you will need to be:

1. A registered NEODC user (if not register [here](http://www.neodc.rl.ac.uk/cgi-infrastructure/mybadc/webreg.cgi.pl): <http://www.neodc.rl.ac.uk/cgi-infrastructure/mybadc/webreg.cgi.pl>)
2. Be authorised for access to the NEODC ARSF dataset (if not, apply for access [here](http://www.neodc.rl.ac.uk/cgi-infrastructure/dataset_registration/dataset_info.cgi.pl?datasetid=arsf): http://www.neodc.rl.ac.uk/cgi-infrastructure/dataset_registration/dataset_info.cgi.pl?datasetid=arsf)
3. Be registered with the ESA SSE portal (register here:
<http://services.eoportal.org/portal/user/BusinessUserRegistration.do>)

1.3 The ESA Service Support Environment

The ESA SSE allows different service providers to install web services for the provision and processing of EO data. The SSE portal effectively functions as a clearinghouse for a wide number of services from a selection of organisations. The SSE allows service “chaining”, that is, a service provider who creates a service to allow the spatio-temporal searching of their catalogue of EO data can provide the resulting data granule to be used as input into a subsequent service that takes this



granule as its input and results in a set of derived geophysical parameters. For example, a user may need to search and identify a Landsat scene and then select a service which will process the scene to enhance vegetation.

The NEODC has previously developed services that allow the limited querying of its ATSR and Landsat7 catalogues and is actively involved in developing further SSE services to compliment the functions already present on its own website.

The ARSF AZ utilities service is one such service and is aimed at the community of ARSF users who have little knowledge of the AZ command line software suite. This web service acts as a “front end” for users to select a scene from the NEODC data browser and process it on the local NEODC machines, via the SSE web portal. Users are also able to specify a scene on their own FTP server for upload to the NEODC machines for processing.

Once the service has successfully completed the user is able to download the processed file (i.e. in HDF level 3a, JPEG, TIF, BIL etc) as well as a number of processing log files, scene metadata and GML scene footprint descriptor files. Much of this information is presented graphically on the service result page. A novel feature of this web service is the ability to output a scene preview JPEG (a format not currently supported by the AZEXHDF application). This allows easy preliminary identification of features within scenes which may then be submitted for further processing into HDF or other formats in the users own image processing software. This is especially useful where the user has no easy access to such software.

1.4 Using the service

This service allows users to geocorrect and orthorectify Level1b ATM and CASI data in HDF format using navigation data held within the datafile recorded at the time of acquisition. Users are able to select a number of output data formats depending on their requirements: Level3a geocorrected HDF format, GeoTIFF, TIFF, JPEG, BIL and BSQ. This web service couples both the AZGCORR and AZEXHDF software into a single operation. For JPEG output this web service also uses GDAL and ImageMagick software to convert an AZEXHDF generated TIFF file into JPEG. GDAL software is also used to extract scene information and aids in generating metadata for users to incorporate in their own Map browser software. The service will return the processed datafile in the specified format for download by FTP as well as various processing logs and metadata in XML and GML format. The output from the AZ software is recorded as users will need this to assess the parameters



and information returned by the AZ software during the process of orthorectification and conversion to the desired format.

This primer is intended to instruct the user on the basic operation of this web service and the example shown here will show how to select an ARSF ATM scene from the NEODC data browser and then process this scene to a JPEG preview image. Also shown is an example on how to process a CASI scene to a Level3a scene using a different map projection and spheroid.

1.5 Processing an ATM scene into a basic preview JPEG image

If the user is a registered NEODC and SSE user and has been authorised to download ARSF data from the NEODC data browser then the first step is to select the desired scene in Level1b format in the NEODC archive. Go to the NEODC data browser and log in at: http://www.neodc.rl.ac.uk/cgi-infrastructure/data_browser/data_browser/neodc/ then navigate to http://www.neodc.rl.ac.uk/cgi-infrastructure/data_browser/data_browser/neodc/arsf/2004/03_15/L1b and a page similar to that below will be presented. Using the mouse, right click over the link “a096031b.hdf” and select the properties option. From the dialogue box highlight the full URL of the scene (this URL will be used in the SSE portal) and hit “CTRL + c” to copy to the clipboard. ARSF ATM scene filenames are prefixed by an “a”, and CASI scenes by a “c”. Therefore, the scene we have just chosen is an ATM scene (date and project information are available as part of the path/URL).



Get Data - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Search Favorites Home Bookmarks Go Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google unix script + if + and 1618 blocked Check AutoLink Send to Settings

Address http://www.neodc.rl.ac.uk/cgi-infrastructure/data_browser/data_browser/neodc/arsf/2004/03_15/L1b

Y! Search Upgrade IE7 Now! Save to My Web Y! Mail Answers Personals Go

NERC Earth Observation Data Centre
Meeting the needs of NERC Science and Survey with Earth Observation Data and Information

Get Data

Logout Help

Username: sdonegan

Current directory: /neodc /arsf /2004 /03_15 /L1b

Download multiple files How to use Depth: 1 Go

a096011b.hdf 150899249 bytes
a096021b.hdf 153208659 bytes
a096031b.hdf 147102749 bytes
a096041b.hdf 174030847 bytes
a096051b.hdf 161843481 bytes
c096011b.hdf 47050791 bytes
c096021b.hdf 80600051 bytes
c096031b.hdf 66466171 bytes
c096041b.hdf 87835275 bytes
c096051b.hdf 84036591 bytes

neodc@rl.ac.uk

Properties

General

c096031b.hdf

Protocol: HyperText Transfer Protocol
Type: HDF Document
Address: /infrastructure/data_browser/data_browser/neodc/arsf/2004/03_15/L1b/c096031b.hdf

OK Cancel Apply

start Local intranet 14:30 Thursday

Once the scene URL is on the clipboard then please go to <http://services.eoportal.org/portal/> and login using your SSE username and password using the link located in the top right of the page. You will be presented with a page like this:



SSE Portal - Microsoft Internet Explorer provided by SSTD Office Systems

User: stevedonegan2 Order List My Profile Log out Help

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google "wise old owl" + wurzels Go Bookmarks 1618 blocked Check AutoLink Send to Go Settings

Address https://services.eoportal.org/portal/user/UserLogin.do

Y! Search Upgrade IE7 Now! Save to My Web Y! Mail Answers Personals Go

eo Sharing Earth Observation Resources Service Support Environment

User: stevedonegan2 Order List My Profile Log out Help

Home Services Personalisation News

Services: The SSE service directory offers access to a continuously expanding set of basic and complex Earth observation and GIS services. You can request a quotation for each of the services or order them via an online form. To order or paying services, you should be a registered SSE user.

Organisations: The SSE portal gives access to a large variety of services from a diverse set of contributors such as; space agencies, data processing centres, data providers, educational establishments, private companies and research centres.

About Us: The Services portal is part of the eoPortal web site, which provides links to many information sources, is sponsored and run by the European Space Agency. ESA is not responsible for the content of external sites. The Service Providers which offer their services through the Services portal are responsible for the content of their pages and for their service provision. Please read the terms of the Service Level Agreement provided in the description of each service. read more...

Search Go Quick Links

Documents Software

Service Requests

Services

Organisations

Search Disclaimer Privacy Contact Us

-- add content -- Add Home About Us Search Disclaimer Privacy Contact Us

This site is best viewed with Internet Explorer 6.0 or Firefox 1.5. Download Adobe SVG viewer 3.0. Mandatory if Timeline display is required.

This is your SSE users “homepage” and from here you can navigate to all the various services offered by various providers subscribed to the SSE portal. To navigate to the ARSF AZ software utilities service, click on “services” and then on the following page, “data conversion” and you will be presented with this page:

SSE Portal - Service Directory - Microsoft Internet Explorer provided by SSTD Office Systems

User: stevedonegan2 Order List My Profile Log out Help

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google "wise old owl" + wurzels Go Bookmarks 1618 blocked Check AutoLink Send to Go Settings

Address http://services.eoportal.org/portal/service/ListService.do?serviceCategoryId=89808480

Y! Search Upgrade IE7 Now! Save to My Web Y! Mail Answers Personals Go

eo Sharing Earth Observation Resources Service Support Environment

User: stevedonegan2 Order List My Profile Log out Help

Home > Services > Data Conversion

Resources of Data Conversion

Category-1 (European Space Agency)

DDS Broadcast (European Space Agency)

IMerisVegetation (European Space Agency)

Manual Service (European Space Agency)

MapGenerator (Rapideye)

NEODC ARSF AZ software Utilities (NERC Earth Observation Data Centre (NEODC))

Raster Clipping (G.I.M., Geographic Information Management nv)

Raster Conversion (G.I.M., Geographic Information Management nv)

Raster Generalization (G.I.M., Geographic Information Management nv)

Raster Reprojection (G.I.M., Geographic Information Management nv)

S1B (KongsbergSpacetecNorwegianComputingCenter)

testcat-1 (European)

Services > Data Conversion

This service allows a user to submit a Category-1 data request. The request implements an administrative authorisation... (Read more)

DDS Broadcast is an example service which makes a daily DDS multicast of ... (Read more)

This service gives access to the IMerisVegetation Service or IMprocessor Service which runs on the ESA Read more)

This is an example service implementing a manual workflow. The service provider must intervene to return the result URL to the... (Read more)

Generates a map given an input UTM projected image, its legends, scale factor and layer format.... (Read more)

This service allows users to geocorrect and orthorectify Level1b NERC ARSF ATM and CAST data in HDF format using navigation data... (Read more)

This service clips raster data using vector polygons. The data within the clipping polygon are kept while the data outside the... (Read more)

This service offers file type conversion for raster data. A large number of formats is supported, including a range of typical... (Read more)

This service resamples raster data to a different (larger) pixel size. The resulting dataset will show less detail, be smaller... (Read more)

This service reprojects raster data from one coordinate system to another. All European projection systems as well as a number... (Read more)

S1B... (Read more)

testcat-1... (Read more)

Order

Request access

Subscribe

Internet



Click the “order” button next to the “NEODC ARSF AZ software utilities” title and you will be taken to the order page for the service:

A screenshot of a Microsoft Internet Explorer window titled "SSE Portal - Order Preparation - Microsoft Internet Explorer provided by SSTD Office Systems". The address bar shows the URL: "http://services.eoportal.org/portal/order/PrepareOperation.do?serviceId=0B809280&operation=Order". The main content area displays the "Service Support Environment" interface for the "ARSF_UTIL : Order" service. At the top, it says "Welcome to the NEODC Airborne Research & Survey Facility (ARSF) AZ software processing facility!". Below this, there are instructions for using the service, including links to the NEODC data browser and helpdesk information. A dropdown menu labeled "Input Access Method" is open, showing options: "Please choose.....", "URL of scene on NEODC Data Browser", and "FTP (use standard format: ftp://ftp.hostname/path/filename i.e. ftp://ftp.neodc.rl.ac.uk/filePath/fileName.hdf)".

Paste the URL of the scene on the NEODC data browser into the entry field under “ARSF Scene URL”. Under “Input Access Method” select “URL of scene on NEODC data browser”. Note that you can also select FTP to upload a scene from your local ftp server if it is one you have already downloaded previously. Once this field has been selected, input fields for your NEODC username and password will be offered –enter these, then select the output format you require. For this example, select “JPEG”.



SSE Portal - Order Preparation - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google "wise old owl" + wurzels Go Bookmarks 1618 blocked Check AutoLink Send to Settings

Address http://services.eoportal.org/portal/order/PrepareOperation.do?serviceId=0B809280&operation=Order

ARSF AZ software utilities : Order

Welcome to the NEODC Airborne Research & Survey Facility (ARSF) AZ software processing facility!

This Web-Service allows online processing of ARSF ATM & CASI data using the AZ software based at the NEODC. You will need to be registered to use this data from the NEODC and also specify the URL to the desired scene at the NEODC.

If required, please register for access to ARSF data at the NEODC here.

Find the link to the scene at the NEODC data browser here (log in with your NEODC username and password).

Please complete the following information before placing your order. Please note that information about your intended use of the data is required by ESA for monitoring purposes.

You can find a primer on the background and usage of this SSE/NEODC service here (not yet available).

If you have any enquiries or problems regarding this service please contact the NEODC helpdesk at neodc@rl.ac.uk

ARSF Scene URL: uk/cgi-infrastructure/data_browser/data_browser/neodc/arsf/2004/03_15/L1b/a096031b.hdf Input Access Method: URL to scene on NEODC Data Browser

NEODC Username: arsf NEODC Password:

Output format: JPEG Pixel size: 2m Map Projection: British National Grid (Default: UKNG1995)

Use a NEXTMAP DEM for geocorrection (NOTE: you MUST be registered for this dataset at the NEODC) NO **currently disabled**

Once JPEG has been selected, further options become available. You will need to select a pixel size for AZGCORR to process the final file pixel size to as well as the Map Projection. Remember that selection of smaller pixel sizes will increase the processing time of the AZ software. In this example leave the projection field to the default projection of the UK National Grid. This is the default projection used by the AZ software. You will also need to select the 3 channels in RGB order used to generate the output JPEG image and then when you are satisfied with the entered parameters click on the “Proceed” button:



SSE Portal - Order Preparation - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google "wise old owl" + wurzels Go Bookmarks 1618 blocked Check AutoLink Send to Settings Address http://services.eoportal.org/portal/order/PrepareOperation.do?serviceId=0B809280&operation=Order Y! Search Upgrade IE7 Now! Save to My Web Y! Mail Answers Personals

JPEG 10m British National Grid (Default: UKNG1995)

For JPEG or TIFF output please enter the three channels you require for RGB: Red: 5 Green: 3 Blue: 2

Use a NEXTMAP DEM for geocorrection (NOTE: you MUST be registered for this dataset at the NEODC) **currently disabled** NO

Use a NEXTMAP DSM overlay to check geocorrection accuracy (NOTE: you MUST be registered for this dataset at the NEODC) **currently disabled** NO

Do you wish to adjust for Roll/Pitch/Yaw to improve geocorrection accuracy? **currently disabled** NO

Price: 0.0 EUR

Please check your order information. You can continue ordering the selected service by selecting the Proceed button.

Proceed

Home About Us Search Disclaimer Privacy Contact Us Internet

This service can detect whether the instrument used is ATM or CASI from the file name in the data file URL and changes the method by which bands to be processed are selected. In this instance as JPEG has been selected only 3 bands are required. If other output options are selected then you may select individual or multiple channels from a drop down menu in the case of processing ATM data (with 12 channels possible). However, the number of channels used by the CASI instrument can vary depending on configuration and intended target scene. Therefore the user is required to enter either a range of channels to process (i.e. 5-25), or a comma delimited list (i.e. 4, 7, 12, 57....n channels). Note that if JPEG is selected which requires only 3 channels then the same 3 channel dialogue appears whether the instrument is ATM or CASI. The TIFF output option is also restricted to 3 channels and uses the same dialogue entry method. The user may also select to just extract the HDF header information using just the AZEXHDF utility, in which case no channel selection is required and the user is just presented with the “Proceed” button at this stage. This option is especially useful for those users wishing to process CASI data and are unsure of the number of channels present for a particular scene. Therefore it is advised to use this option before selecting the channel entry method outlined above to prevent errors during the operation of the AZGCORR utility.



If any errors have been detected with your order an error message should display what you need to change in order to successfully place an order. This submits the order information and a following page is shown asking the user to confirm the order. This subsequent page will be shown if the order has been submitted successfully.

A screenshot of a Microsoft Internet Explorer window titled "SSE Portal - Order Check-out Result - Microsoft Internet Explorer provided by SSTD Office Systems". The address bar shows the URL: https://services.eoportal.org/portal/order/CheckoutOrder.do?operation=Order&operationSynchronousFlag=false&orderId=11800E86. The main content area displays a confirmation message: "Your order has been successfully sent to the service provider. Order identifier: 11800E86. You can check your orders in the order list." Navigation links at the bottom include Home, About Us, Search, Disclaimer, Privacy, and Contact Us. The browser interface includes standard toolbar icons and a status bar at the bottom.

If the order has been successful then the order information will have been passed to the processing machines at the NEODC. These will take the order parameters and create the relevant AZGCORR and AZEXHDF command lines and submit them to the local version of the software. Note the “order identifier” number. You can track the progress of your order as well as access the completed datafiles by clicking on “order list” in the horizontal title bar of the above page. This will track all your orders on a page similar to the following:



SSE Portal - Order List - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Bookmarks Go Bookmarks 1618 blocked Check AutoLink Send to Settings

Address http://services.eoportal.org/portal/order/UserListOrder.do

Y! Search Upgrade IE7 Now! Save to My Web Y! Mail Answers Personals

Service Support Environment

User: stevedonegan2 Order List My Profile Log out Help

Order List

You have the following orders in your account.
You can also filter the list by specifying a status and delete orders that have not yet been checked out.

View By Status: All

294 Orders found, displaying 1-20. Page: [First/Prev] 1, 2, 3, 4, 5, 6, 7, 8 [Next/Last]

Order ID	Service	Organisation	Price	Last update	Operation	Status
11801486	ARSF A2 software utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 12:57	Order	Completed
11800866	ARSF A2 software utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 11:17	Order	Completed
11800786	ARSF A2 software utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 11:09	Order	Completed
1180F986	NEODC ARSF A2 software Utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 10:45	Order	Waiting Confirmation
1180F886	NEODC ARSF A2 software Utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 10:38	Order	Waiting Confirmation
1180F186	NEODC ARSF A2 software Utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 10:05	Order	Pending
1180E886	NEODC ARSF A2 software Utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-15 09:28	Order	Pending
1180D086	NEODC ARSF A2 software Utilities	NERC Earth Observation Data Centre (NEODC)	0.0	2006-12-14 16:13	Order	Pending
11800183	NEODC ATSR	NERC Earth Observation Data Centre (NEODC)	0.0	2006-08-18 12:09	Order	Completed
11805082	NEODC LANDSAT	NERC Earth Observation Data Centre (NEODC)	0.0	2006-08-16 16:07	Order	Completed
11807485	NEODC LANDSAT	NERC Earth Observation Data Centre (NEODC)	0.0	2006-08-20 11:02	Order	Completed
11802782	NEODC ATSR	NERC Earth Observation Data Centre (NEODC)	0.0	2006-07-12 13:11	Order	Preparing
11804082	NEODC LANDSAT	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-22 15:33	Order	Preparing
11805282	NEODC LANDSAT	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-22 15:47	Order	Preparing
11802092	NEODC LANDSAT	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-22 15:32	Order	Preparing
1180F932	NEODC ATSR	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-22 10:02	Order	Waiting Confirmation
11807C80	NEODC ATSR	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-19 13:17	Order	Completed
11803D80	NEODC LANDSAT	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-16 13:28	Order	Preparing
11802780	NEODC ATSR	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-16 13:26	Order	Completed
11808780	NEODC ATSR	NERC Earth Observation Data Centre (NEODC)	0.0	2006-06-15 09:29	Order	Completed

Home About Us Search Disclaimer Privacy Contact Us

Once the status of your order (make sure you track the order with the correct identifier number) has changed from “pending” to “complete” then click on the relevant Order ID in the left-most column. The following page shows example output from the service.

SSE Portal - Order Information - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Bookmarks Go Bookmarks 1618 blocked Check AutoLink Send to Settings

Address http://services.eoportal.org/portal/order/OrderForwardUI.jsp?orderStatusSubStatus=1180B489;Order;Completed

Order Result Information

Order Result

Result Status:	SUCCESSFUL
Availability period	5 days
Preview image of processed file	
copyright NEODC 2007 AZ Utility	
Channel Combinations Used:	RED GREEN BLUE

Done Internet



A 50% scaled preview image of the JPEG is returned, with the actual full size image available for immediate download from the first “Link to processed file”. Other such links are returned so the user can download the processing log (used to capture the output of the AZ software processing), a GML mapfile depicting the scene footprint (the user can paste this URL into software such as CADCORP SIS view¹) using a Map coverage service. Also available for download is a non-conformant XML metadata file with a summary of the important metadata and software commands used by the service so the user can replicate if required on their own systems. This information is also presented on this page for easy viewing and is extracted from the HDF header metadata fields in the original datafile using the AZEXHDF application.

These download files can also be accessed using a standard FTP using the randomly generated username and password from [ftp.neodc.rl.ac.uk](ftp://ftp.neodc.rl.ac.uk). All products will be available for 5 days after the order operation and will be removed after this period to ensure file space is clear on the NEODC file servers.

¹ You can download this software freely from <http://www.cadcorp.com/>



SSE Portal - Order Information - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Home Bookmarks Go AutoLink Send to Settings

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google Go Bookmarks 1618 blocked Check AutoLink Send to Settings

Address http://services.eoportal.org/portal/order/OrderForwardUI.jsp?orderStatusSubStatus=1180B489;Order;Completed

Result									
Output product size (kb):	87								
File format:	JPEG								
Link to processed file:	ftp://1180B489:Db9HCYOi@mass.neodc.rl.ac.uk/AZprocessingLog_and_HeaderInfo.txt								
Output product size (kb):	10								
File format:	Text (Log of AZGCORR and AZEXHDF processor output and ancillary information)								
Link to processed file:	ftp://1180B489:Db9HCYOi@mass.neodc.rl.ac.uk/a09603.gml								
Output product size (kb):	0								
File format:	GML (scene footprint and metadata)								
Link to processed file:	ftp://1180B489:Db9HCYOi@mass.neodc.rl.ac.uk/sceneDetails.xml								
Output product size (kb):	1								
File format:	XML (basic non-conformant metadata document recording scene information shown on this page)								
Alternative manual FTP	<table border="1"><tr><td>FTP site at:</td><td>mass.neodc.rl.ac.uk</td></tr><tr><td>Username:</td><td>1180B489</td></tr><tr><td>Password:</td><td>Db9HCYOi</td></tr></table>	FTP site at:	mass.neodc.rl.ac.uk	Username:	1180B489	Password:	Db9HCYOi		
FTP site at:	mass.neodc.rl.ac.uk								
Username:	1180B489								
Password:	Db9HCYOi								
AZGCORR command line used:	azgcorr -1 a096031b.hdf -3 a096033a.hdf -p 10 10 -b 4 3 2 -1								
AZGCORR version used:	azgcorr -- ver: 4.6.11-lin Dec 19 2006 (C) Azimuth Systems UK 1996, 2006								
AZEXHDF command line used:	azex hdf a096033a.hdf -T a096033a.tif								
AZEXHDF version used:	azex hdf -- ver: 3.1.1 Nov 29 2006 (C) Azimuth Systems UK 1996, 2006								
GDAL_TRANSLATE command line used:	gdal_translate -ot byte a096033a.tif -o JPEG a096033a.jpg								
	<table border="1"><tr><td>Instrument used to acquire this scene:</td><td>AZ16</td></tr><tr><td>Date of ARSF flight:</td><td>06/04/2004</td></tr><tr><td>ARSF flight number:</td><td>05/008</td></tr><tr><td>ARSF project number:</td><td>03/015</td></tr></table>	Instrument used to acquire this scene:	AZ16	Date of ARSF flight:	06/04/2004	ARSF flight number:	05/008	ARSF project number:	03/015
Instrument used to acquire this scene:	AZ16								
Date of ARSF flight:	06/04/2004								
ARSF flight number:	05/008								
ARSF project number:	03/015								

Note that when selecting the JPEG output option that the service uses GDAL (http://gdal.maptools.org/gdal_translate.html) and ImageMagick software (<http://www.imagemagick.org/script/index.php>) to convert a 16 bit TIFF image into an 8 bit JPEG. In order to successfully complete the conversion this software needs to scale the 16 bit image information into 8 bit 0-255 image values and therefore image depth and clarity is lost. This software also performs a basic Histogram Stretch to accentuate the appearance of the imagery, and hence, some of the colours may be overstated depending on which combination of input channels used. The above example uses an RGB combination of ATM channels 4 3 2 which is a close approximation of true-colour. The above process may be repeated many times with various combinations of channels.

The JPEG option is most useful for quickly identifying scenes with particular items of interest to the user, who may then further use the service to download high resolution image data for use in their own image processing applications. We also recommend for validation reasons that wherever possible the user should download the AZ software suite for LINUX from the NEODC website and use the AZ commands reported by the service to ensure consistent operation. This web service should therefore provide a useful AZ software training suite. We also recommend the download of the AZ software for advanced usage according to the AZ users handbook (http://www.neodc.rl.ac.uk/cgi-infrastructure/data_browser/data_browser/neodc/arsf/Software/azgcorr_v5.pdf).



1.6 Processing a CASI scene into a Level3a GeoTiff using UTM projection

This example will show the user how to process a CASI scene into a multiple channel GeoTiff using a Transverse Mercator Projection in the Airy Spheroid. This processing is more involved than the previous example and because the CASI instrument has a varying number of spectral channels deployed depending on target and required swath, an extra processing step is required to ascertain how many channels are available before full processing commences.

A screenshot of a Microsoft Internet Explorer window showing the SSE Portal - Order Preparation page. The title bar reads "SSE Portal - Order Preparation - Microsoft Internet Explorer provided by SSTD Office Systems". The address bar shows the URL "http://services.eoportal.org/portal/order/PrepareOperation.do?serviceId=0B809280&operation=Order". The main content area displays the "ARSF AZ software utilities : Order" page from the NEODC. It includes fields for "ARSF Scene URL" (containing "uk/cgi-infrastrucure/data_browser/data_browser/neodc/arsf/2004/04_11/L1b/c146031b.hdf"), "Input Access Method" (set to "URL to scene on NEODC Data Browser"), "NEODC Username" (set to "arsf"), "NEODC Password" (a masked password), and "Output format" (a dropdown menu showing options: "Please choose.....", "GeoTIFF", "TIFF", "JPEG", "BIL (Band Interleaved by Line)", "BSQ (Band Sequential)", "Level 3a HDF", and "HDF Header metadata", with "HDF Header metadata" being the selected option). The page also contains some descriptive text and links related to the service.

Use the following URL as an example CASI scene http://www.neodc.rl.ac.uk/cgi-infrastrucure/data_browser/data_browser/neodc/arsf/2004/04_11/L1b/c146031b.hdf (obtained using the same method on the NEODC data browser described in section 1.3). Paste this link into the ARSF scene URL text box on the Service order page, selecting “URL” as the input access method as well as entering your NEODC username and password. Select “HDF Header metadata” from the output format selection menu as shown in the graphic above. Now click on the “Proceed” button at the bottom of the page and “Confirm” the order on the subsequent page. Go to the Order List and wait for the service to complete, after which you may click on the link (the orderId) which will take you to the service results which should be similar to the graphic below.



SSE Portal - Order Information - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Search Favorites Home Bookmarks Go Settings

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google Go Bookmarks 1618 blocked Check AutoLink Send to

Address http://services.eoportal.org/portal/order/OrderForwardUI.jsp?orderStatusSubStatus=1180C289;Order;Completed Go

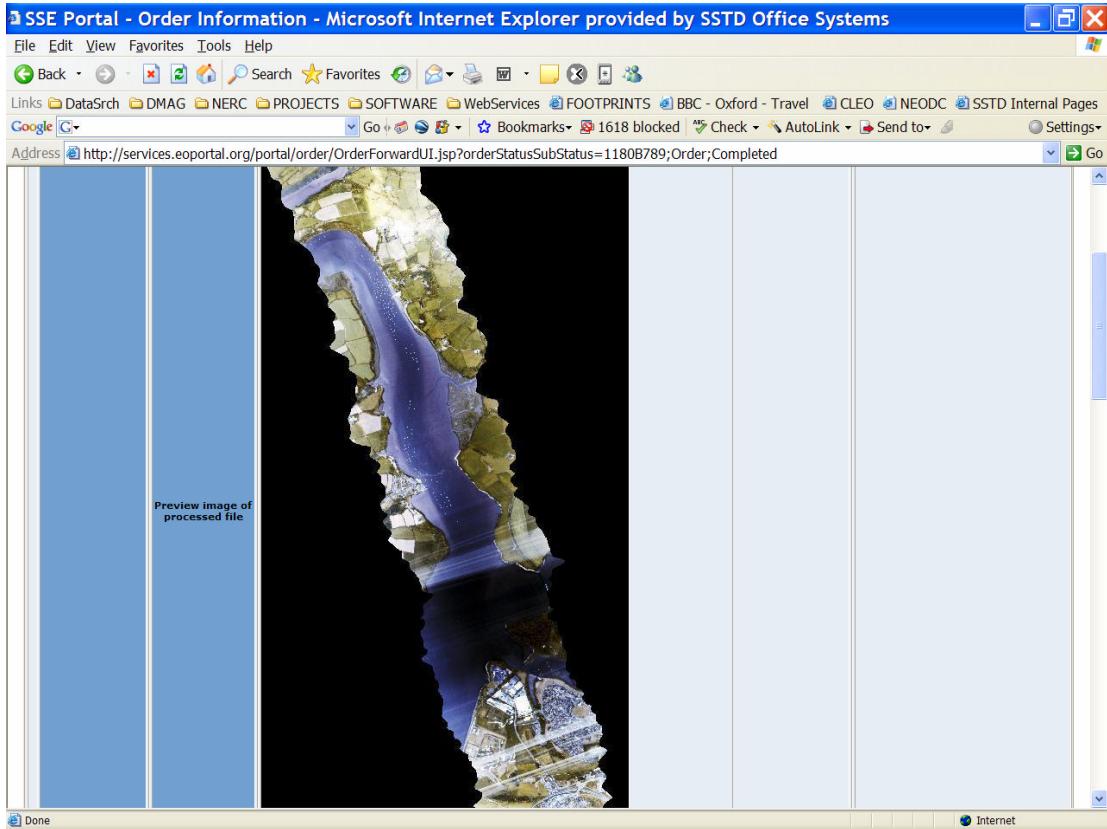
Availability period

Result

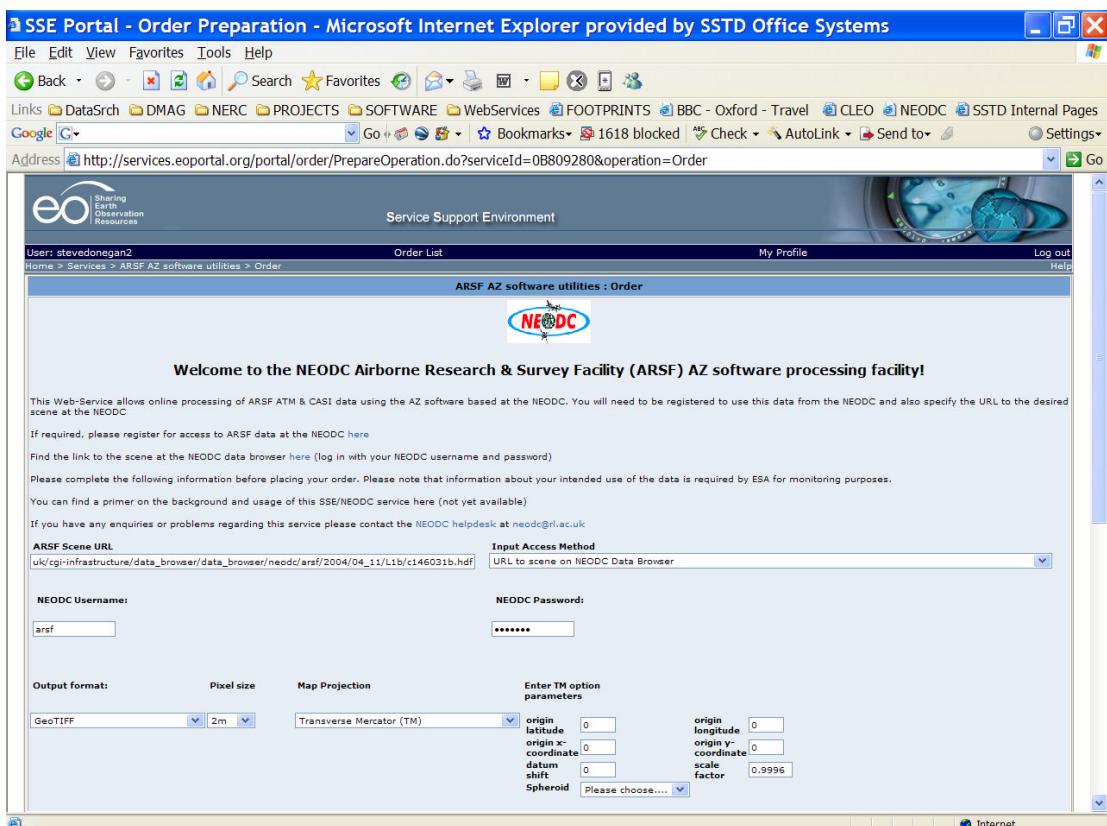
Processed Scene Information

Link to processed file:	ftp://1180C289:6soaERWG@mass.neodc.rl.ac.uk/AZprocessingLog_and_HeaderInfo.txt
Output product size (kb):	5
File format:	Text (Log of AZGCORR and AZEXHDF processor output and ancillary information)
Link to processed file:	ftp://1180C289:6soaERWG@mass.neodc.rl.ac.uk/sceneDetails.xml
Output product size (kb):	0
File format:	XML (basic non-conformant metadata document recording scene information shown on this page)
Alternative manual FTP	FTP site address: mass.neodc.rl.ac.uk Username: 1180C289 Password: 6soaERWG
AZGCORR version used:	azgcorr -- ver: 4.6.11-in Dec 19 2006 (C) Azimuth Systems UK 1996, 2006
AZEXHDF version used:	azexhdf -- ver: 3.1.1 Nov 29 2006 (C) Azimuth Systems UK 1996, 2006
Instrument used to acquire this scene:	CASI
Date of ARSF flight:	25/05/2004
ARSF flight number:	04/025
ARSF project number:	04/11
Principle Investigator:	Dr. S. Lavender, Univ. of Plymouth
Project title/target:	Plymouth
Scene start/end coordinates:	50.4816 N 4.2221 W 50.4063 N 4.1806 W
Altitude of Aircraft at time of acquisition:	5360ft
Pixels in original data (columns):	512
Pixels in original data (lines):	2949
Number of channels in data file:	17
Projection of Outputfile:	
Spheroid used in Outputfile:	
Datum shift used:	null

This extracts the header information from the original HDF file in the same way as the previous example but without any further processing. This is equivalent to just using the AZEXHDF application on the original data file. One of the metadata fields returned is the “Number of channels in the datafile”. In this instance the CASI instrument was configured for 17 channels. If you wish you may now repeat the steps in section 1.3 to produce a preview image to ascertain whether this particular scene includes the features you are interested in. You could of course just select JPEG as the output format and skip the Header Metadata option as this will return the same information as shown, but it is much quicker to just extract the header metadata as far fewer operations are required to complete this! The graphic below shows a preview image for this particular scene.



In order to process the scene to a multiple channel Geotiff you will need to repeat the above steps, but select “GeoTiff” from the Output Format selection menu and you will be presented with further options as shown in the below graphic.





The Transverse Mercator projection option requires extra parameters to be entered and we refer you to the AZ users software manual for a full explanation of this. The parameter values will vary depending on the location of the scene and the users requirements. The extra parameter fields are filled with default values which will allow the user to proceed with this “geocorrection”. You must select a spheroid to use with this particular projection, and for this example choose the “Airy” spheroid.

The next stage in the order process requires the user to enter the desired channels to be processed and included in the final output GeoTiff. The selection of channels for the CASI instrument differs from the simple drop down menu selection of ATM channels, in that you can either define individual channels using a comma delimited list, or use a range. Examples are given on the page, shown in the graphic below.

SSE Portal - Order Preparation - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Home Search Favorites Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google Go Bookmarks 1618 blocked Check AutoLink Send to Settings

Address Go

parameters

GeoTIFF 2m Transverse Mercator (TM) origin latitude origin longitude
origin x- coordinate origin y- coordinate
datum shift scale factor
Spheroid

Use a NEXTMAP DEM for geocorrection (NOTE: you MUST be registered for this dataset at the NEODC) **currently disabled**

Use a NEXTMAP DSM overlay to check geocorrection accuracy (NOTE: you MUST be registered for this dataset at the NEODC) **currently disabled**

Do you wish to adjust for Roll/Pitch/Yaw to improve geocorrection accuracy? **currently disabled**

Compact Airborne Spectrographic Imager (CASI)

Please input the CASI channels you require, using a comma to delimit the channels i.e. 1,2,3,5,etc OR a range i.e. 1-5

Price: 0.00 EUR

Please check your order information.
You can continue ordering the selected service by selecting the Proceed button.

Home About Us Search Disclaimer Privacy Contact Us Internet

In this particular order channels 1-10 have been selected, after this selection has been made you can click “Proceed” and then “Confirm”, then go to the order list and wait for the order to complete. Once the order has completed and is ready for download you should see a screen similar to the graphic below.



SSE Portal - Order Information - Microsoft Internet Explorer provided by SSTD Office Systems

File Edit View Favorites Tools Help

Back Search Favorites Home Bookmarks Go Bookmarks Check AutoLink Send to Settings

Links DataSrch DMAG NERC PROJECTS SOFTWARE WebServices FOOTPRINTS BBC - Oxford - Travel CLEO NEODC SSTD Internal Pages Google Go

Address http://services.eoportal.org/portal/order/OrderForwardUI.jsp?orderStatusSubStatus=1180D489;Order;Pending

Order Result Information

Order Result

Result Status:	SUCCESSFUL																																										
Availability period	5 days																																										
Result	<table border="1"><tr><td>Link to processed file:</td><td>ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/c146033a.tif</td></tr><tr><td>Output product size (kb):</td><td>179152</td></tr><tr><td>File format:</td><td>GTIFF</td></tr><tr><td>Link to processed file:</td><td>ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/AZprocessingLog_and_HeaderInfo.txt</td></tr><tr><td>Output product size (kb):</td><td>11</td></tr><tr><td>File format:</td><td>Text (Log of AZGCORR and AZEXHDF processor output and ancillary information)</td></tr><tr><td>Link to processed file:</td><td>ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/c14603.gml</td></tr><tr><td>Output product size (kb):</td><td>0</td></tr><tr><td>File format:</td><td>GML (scene footprint and metadata)</td></tr><tr><td>Link to processed file:</td><td>ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/sceneDetails.xml</td></tr><tr><td>Output product size (kb):</td><td>1</td></tr><tr><td>File format:</td><td>XML (basic non-conformant metadata document recording scene information shown on this page)</td></tr><tr><td>Alternative manual FTP</td><td><table border="1"><tr><td>FTP site at:</td><td>mass.neodc.rl.ac.uk</td></tr><tr><td>Username:</td><td>1180D489</td></tr><tr><td>Password:</td><td>voAfisGW</td></tr></table></td></tr><tr><td>AZGCORR command line used:</td><td>azgcorr -i c146031b.hdf -3 c146033a.hdf -p 2 2 -b 1 2 3 4 5 6 7 8 9 10 -1 -mTM 1 0 0 0 0.9996 0 0 -dNO</td></tr><tr><td>AZGCORR version used:</td><td>azgcorr -- ver: 4.6.11-in Dec 19 2006 (C) Azimuth Systems UK 1996, 2006</td></tr><tr><td>AZEXHDF command line used:</td><td>azex hdf c146033a.hdf -G c146033a.tif</td></tr><tr><td>AZEXHDF version used:</td><td>azex hdf -- ver: 3.1.1 Nov 29 2006 (C) Azimuth Systems UK 1996, 2006</td></tr><tr><td>Instrument used to acquire this scene:</td><td>CASI</td></tr></table>	Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/c146033a.tif	Output product size (kb):	179152	File format:	GTIFF	Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/AZprocessingLog_and_HeaderInfo.txt	Output product size (kb):	11	File format:	Text (Log of AZGCORR and AZEXHDF processor output and ancillary information)	Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/c14603.gml	Output product size (kb):	0	File format:	GML (scene footprint and metadata)	Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/sceneDetails.xml	Output product size (kb):	1	File format:	XML (basic non-conformant metadata document recording scene information shown on this page)	Alternative manual FTP	<table border="1"><tr><td>FTP site at:</td><td>mass.neodc.rl.ac.uk</td></tr><tr><td>Username:</td><td>1180D489</td></tr><tr><td>Password:</td><td>voAfisGW</td></tr></table>	FTP site at:	mass.neodc.rl.ac.uk	Username:	1180D489	Password:	voAfisGW	AZGCORR command line used:	azgcorr -i c146031b.hdf -3 c146033a.hdf -p 2 2 -b 1 2 3 4 5 6 7 8 9 10 -1 -mTM 1 0 0 0 0.9996 0 0 -dNO	AZGCORR version used:	azgcorr -- ver: 4.6.11-in Dec 19 2006 (C) Azimuth Systems UK 1996, 2006	AZEXHDF command line used:	azex hdf c146033a.hdf -G c146033a.tif	AZEXHDF version used:	azex hdf -- ver: 3.1.1 Nov 29 2006 (C) Azimuth Systems UK 1996, 2006	Instrument used to acquire this scene:	CASI
Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/c146033a.tif																																										
Output product size (kb):	179152																																										
File format:	GTIFF																																										
Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/AZprocessingLog_and_HeaderInfo.txt																																										
Output product size (kb):	11																																										
File format:	Text (Log of AZGCORR and AZEXHDF processor output and ancillary information)																																										
Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/c14603.gml																																										
Output product size (kb):	0																																										
File format:	GML (scene footprint and metadata)																																										
Link to processed file:	ftp://1180D489:voAfisGW@mass.neodc.rl.ac.uk/sceneDetails.xml																																										
Output product size (kb):	1																																										
File format:	XML (basic non-conformant metadata document recording scene information shown on this page)																																										
Alternative manual FTP	<table border="1"><tr><td>FTP site at:</td><td>mass.neodc.rl.ac.uk</td></tr><tr><td>Username:</td><td>1180D489</td></tr><tr><td>Password:</td><td>voAfisGW</td></tr></table>	FTP site at:	mass.neodc.rl.ac.uk	Username:	1180D489	Password:	voAfisGW																																				
FTP site at:	mass.neodc.rl.ac.uk																																										
Username:	1180D489																																										
Password:	voAfisGW																																										
AZGCORR command line used:	azgcorr -i c146031b.hdf -3 c146033a.hdf -p 2 2 -b 1 2 3 4 5 6 7 8 9 10 -1 -mTM 1 0 0 0 0.9996 0 0 -dNO																																										
AZGCORR version used:	azgcorr -- ver: 4.6.11-in Dec 19 2006 (C) Azimuth Systems UK 1996, 2006																																										
AZEXHDF command line used:	azex hdf c146033a.hdf -G c146033a.tif																																										
AZEXHDF version used:	azex hdf -- ver: 3.1.1 Nov 29 2006 (C) Azimuth Systems UK 1996, 2006																																										
Instrument used to acquire this scene:	CASI																																										

In this instance there is no preview image, but the information returned and the ancillary files ready for download are the same (scene metadata, GML footprint and processing log). Note that in this example we have created a 10 channel GeoTiff and as such will only be readable by such specialist image processing applications as ERDAS Imagine or RSI ENVI etc. Basic image editors and viewers can often not handle TIFF format images with anything other than 3 channels (i.e. RGB). The graphic below shows a false colour composite using channels RGB 9 8 4 in Erdas Imagine.

