GEO DA-09-03d_3: Update ICEDS information server to provide OGC-compliant access to ASTER 30m DEM data

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How ICEDS can contribute to Global DEM Inter-operability
## http://iceds.net/

- **Provide a platform for viewing different sources of DEMs as WMS maps: examples include SRTM (V1 and V2), fused ASTER-SRTM DEM (Three Gorges)**
- **Display ASTER-GDEM using SRTM colourised hill-shaded WMS LUT including location of all data gaps (as system does currently for SRTMv1 & v2)**
- **View topography alone or merged with image maps from multiple sources with overlaid best available mapping information**
- **Compare blue-line (water) datasets derived from SRTM vs derived from traditional maps and in future from ASTER and other sources of DEMs**
- **View multiple datasets from different sources or different versions using transparency, swipe and flicker as well as on-the-fly height difference maps**
- **Assess any planimetric offsets using flicker between DEMs and derive amount**
- **Browse any WMS server images including internal datasets from within a firewall in context or for inter-comparison**
- **Provide links to WCS pixel filler datasets, identified by data gaps**
- **Explore online several GEOSS applications by adding RSS models at the regional, continental and global scale (e.g. tsunami impact on global population, dispersal of chemical or nuclear releases)**

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Example 1: SRTM V2 with (old) ASTER-DEM footprint locations superimposed

http://iceds.net
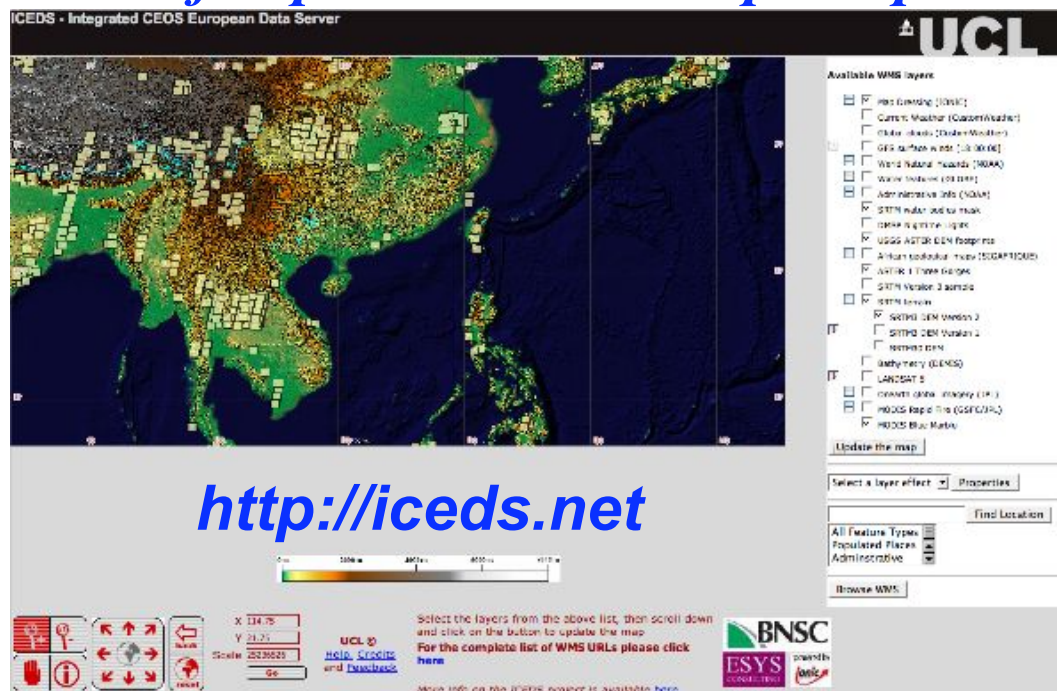
Example 2: SRTM V2 with (old) ASTER-DEM footprints, SRTM water and transparency

http://iceds.net
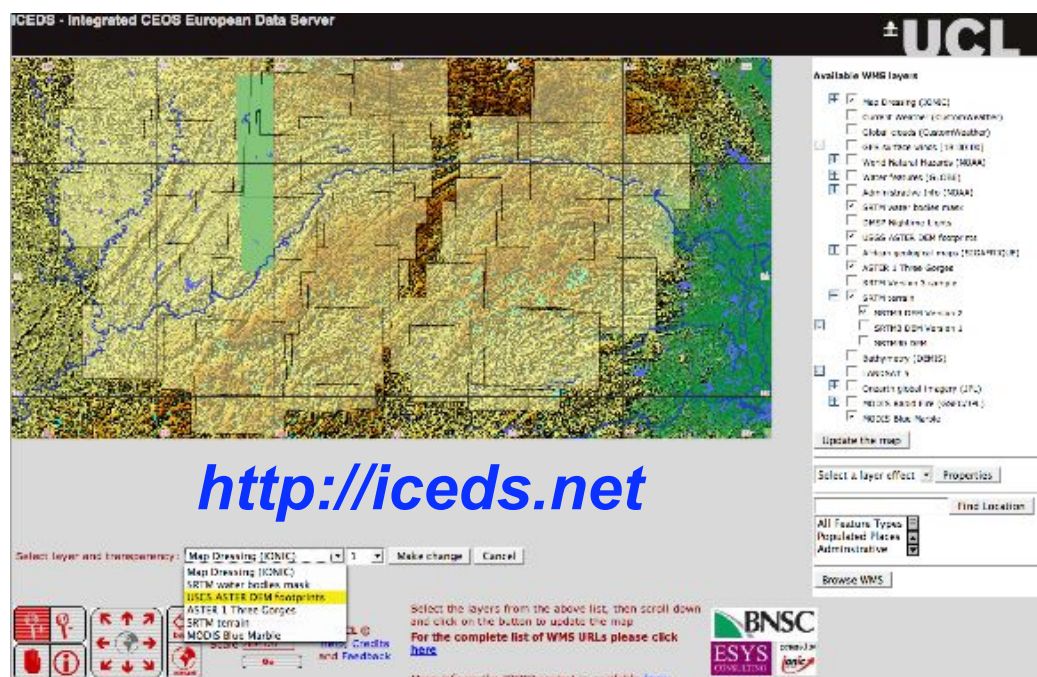
Example 3: ASTER-SRTM merged DEM with SRTM-derived and NOAA rivers (note errors!)

http://iceds.net
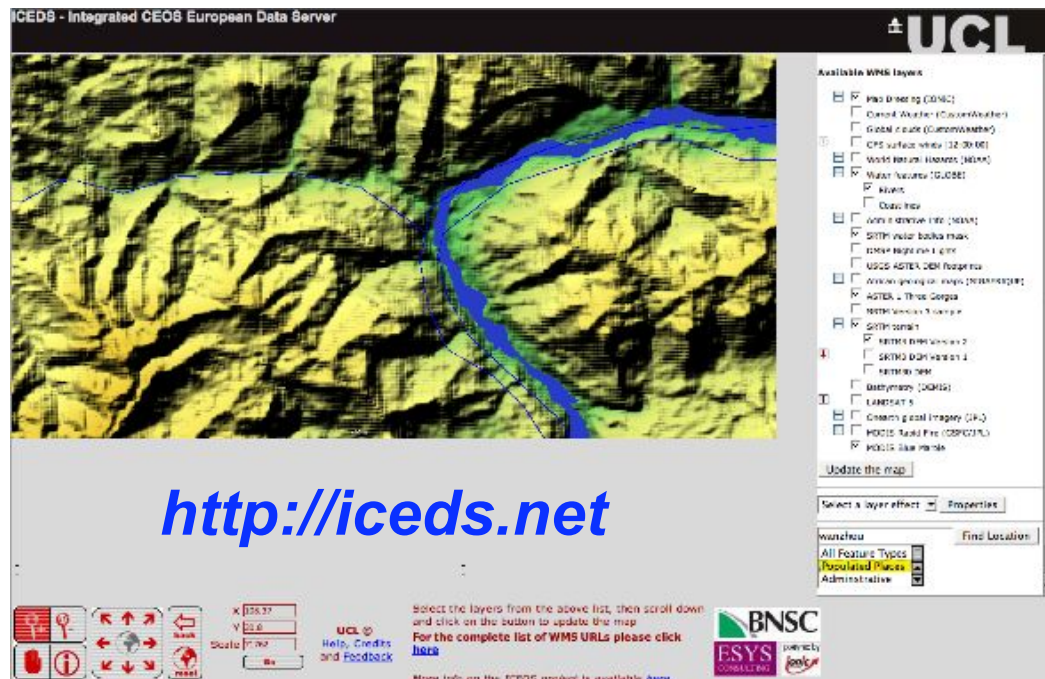
Example 4: ASTER-SRTM merged DEM with SRTM-water and SRTM backscatter image

http://iceds.net
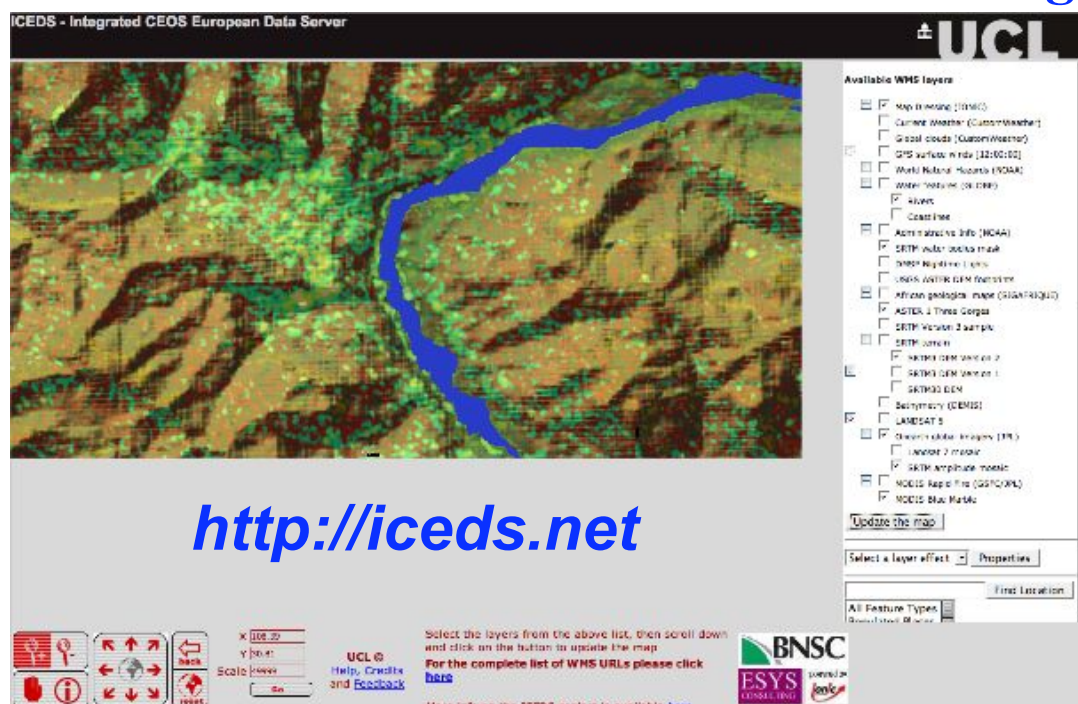
ICEDS next steps

- Plan to order all ASTER GDEM tiles and then colourise DEMs using the existing colour LUT and publish these as a new WMS layer. This WMS can be combined with the greyscale SAR backscatter global mosaics being provided by WMS servers at JAXA (ALOS-PALSAR) and ESA (ENVISAT-ASAR) as well as SRTM-C at JPL
- Stacking number will also be provided as grayscale or colour
- SRTM and ASTER will also be provided as grayscale shaded and grayscale intensity->height so that they can be easily combined using transparency with colour image datasets representing Landsat-5 and 7, SRTM-X
- ASTER-SRTM height differences will also be supplied as colourised or grayscale WMS
- SRTM-X DEM WMS to be added as and when made available by DLR
- Plan to add function to allow users to display transects (X_only, Y_only and arbitrary)
- Using the ESA-ESRIN "on-the-fly" convertor (OGC-KML), all ICEDS datasets will be easily displayable in Google Earth for 3D viewing
- All ICEDS datasets to be made compatible with iPhone and other PDA displays in a tbd manner

CEOS-WGCV ACTION points

- CEOS to encourage METI through SIT to remove the re-distribution restriction to permit ICEDS to display ASTER GDEM products
- CEOS to encourage BNSC to support ICEDS as a GEO portal service
- CEOS to support the idea that "ICEDS should include localized validation DEM data and associated quality information (e.g. gap locations; number of ASTER observations per pixel, etc.) by encouraging USGS to release user-supplied validation datasets for the AOC activity
- CEOS to encourage member space agencies to set-up an ICEDS WMS server for their own DEMs (DLR for SRTM-X; SPOT Image for Ref3D; ISRO for P5; JAXA for ALOS-PRISM/PALSAR) in line with the CEOS recommendation agreed by CEOS Plenary.
- Specifically CEOS-WGCV Chair to invite representatives of each of the aforementioned agencies at CEOS Plenary to submit a short (5-10 slides) presentation to TMSG Chair at each WGCV Plenary to describe progress towards providing WMS services of theur DEM products