

International Digital Elevation Model Service (IDEMS)

<https://idems.maps.arcgis.com/home/index.html>

Director, Mr Kevin M. Kelly (USA)

Structure

The Governing Board (GB) of IDEMS consists of five members who oversee the operation and general activities of the service. The GB is structured as follows:

Director of IDEMS:	Mr Kevin M Kelly
Deputy Director of IDEMS:	Dr Jianbin Duan
IAG/IGFS representative:	Dr Riccardo Barzhagi
Advisory member:	Dr Christian Hirt
Advisory member:	Dr Michael Kuhn

Overview

IDEMS is a service of IAG operated by Environmental Systems Research Institute (Esri) (<http://www.esri.com/>). The service became operational in 2016. The IDEMS website was developed and is maintained by Mr Kevin M. Kelly of Esri, and scientific content provided by Dr Christian Hirt of TU Munich. IDEMS provides a focus for distribution of data and information about digital elevation models, spherical-harmonic models of Earth's global topography, lunar and planetary DEM, relevant software and related datasets (including representation of Inland Water within Digital Elevation Models) which are available in the public domain.



Screenshot of home page of IDEMS showing DEM and related content categories.

IDEMS Products

IDEMS currently hosts 31 sources of terrestrial and planetary DEM data providers (see Table 1) and 126 references of DEM and bathymetry research papers relevant to geodesy and Earth sciences. The IDEMS bibliography is updated regularly (currently two times per year) to provide the user community with an up-to-date overview over key developments in DEM production, validation and applications. The IDEMS bibliography includes recent and seminal papers describing relevant data sets of Earth's topography, bathymetry, ice data and composite elevation models. Some DEM sources appear in multiple categories to facilitate source

discovery for the researcher. IDEMS serves as a repository of links to DEM data providers rather than a DEM data storage facility. The site also provides access to Esri’s free *ArcGIS Earth* (<https://www.arcgis.com/home/item.html?id=7863485b217241cbb67d98d7e361cac5>) which is fully integrated with the ArcGIS platform for accessing, sharing, and publishing maps and data.

Over the last 3 years, the IDEMS website has been continually updated with new DEM datasets, both terrestrial and planetary. Table 1 lists the current content available from the IDEMS website.

Table 1. DEM and Related Data Sources Hosted on IDEMS

Bathymetry and Ice Data (12)	Antarctica CryoSat-2 DEM
	Bedmap2
	BOEM Northern Gulf of Mexico Bathymetry
	Elevation Coverage Map (Esri)
	Flight MH370 Bathymetry
	Global Bathymetry BTM (Esri)
	Global Water Body Map (G3WBM)
	Ice, Cloud, and Land Elevation (ICESat / GLAS Data)
	Polar Geospatial Center
	Randolph Glacier Inventory (RGI 6.0)
	SRTM30_PLUS (30 arc-sec grid), 2014
	Svalbard time-lapse terrain data
Global DEMs (14)	ALOS/PRISM AW3D30
	ASTER GDEM v2
	Elevation Coverage Map (Esri)
	Esri Elevation Layers
	ETOPO1 (60 arc-sec grid), 2009
	Global Terrain DEM (Esri)
	Global Water Body Map (G3WBM)
	MERIT DEM (SRTM-based Bare-Earth model), 2017
	NASADEM (reprocessed SRTM model), 2017
	SRTM v3 (NASA)
	SRTM v4.1 (CGIAR-CSI)
	SRTM30_PLUS (30 arc-sec grid), 2014
	TanDEM-X DEM
Viewfinder Panorama DEMs (2014)	
Regional DEMs (7)	Antarctica CryoSat-2 DEM
	Arctic DEM Explorer
	OpenTopography
	Elevation Coverage Map (Esri)
	Esri Elevation Layers
	Polar Geospatial Center
	Svalbard Time-Lapse Terrain Model
Planetary Terrain Data (3)	NASA Planetary Data System (PDS) Geosciences Node
	Planetary topography data archive
	USGS Astrogeology Science Center
Earth Models (4)	Earth2014 (60 arc-sec), 2014
	ICE-6G GIA Model
	Preliminary Reference Earth Model (PREM)
	Topographic Earth Models (LMU Munich)

IDEMS Website Usage

Table 2 below shows IDEMS activity from 2016 to 2019. Over the past three years the site has received reasonably good use for the small community it serves. Among the 10 most popular IDEMS content, these items collectively received a total of 6,433 views. Among all IDEMS content, 895 DEM or DEM related descriptions/metadata were downloaded.

Table 2. IDEMS activity by number of views of most popular content and number of downloads of all content since April,2016

Data Type	No. of item views	No. of downloads of DEM descriptions / metadata
ALOS/PRISM AW3D30		42
Antarctica CryoSat-2 DEM		6
ArcGIS Earth (Esri)		20
Arctic DEM Explorer		15
ASTER GDEM v2	161	140
BedMap2		28
BOEM Northern Gulf of Mexico Bathymetry		5
DEM and BTM Research Papers	102	
Earth2014 (60 arcsec), 2014	74	73
Elevation Coverage Map (Esri)	411	
Esri Elevation Layers		41
ETOPO1 (60 arc-sec grid), 2009		13
Getting Started with IDEMS	73	
Global bathymetry (Esri)	762	
Global Geospatial Data from Earth Observation (2016)		19
Global Terrain DEM (Esri)	4,684	
Global Water Body Map (G3WBM)		9
IAU Cartographic Coordinates and Rotational Elements (WGCCRE)		13
Ice, Cloud, and Land Elevation (ICESat / GLAS Data)		11
ICE-6G GIA Model		3
MERIT DEM (SRTM-based Bare-Earth model), 2017		9
MH370 Bathymetry		2
NASA Planetary Data System (PDS) Geosciences Node		10
NASADEM (reprocessed SRTM model), 2017		19
OpenTopography		4
Planetary topography data archive		22
Polar Geospatial Center		11
Preliminary Reference Earth Model (PREM)		46
Randolph Glacier Inventory (RGI 6.0)		8
SRTM v3 (NASA)	111	99
SRTM v4.1 (CGIAR-CSI)	74	59
SRTM30 PLUS (30 arc-sec grid), 2014		39
Svalbard Time-Lapse Terrain Model		8
TanDEM-X DEM	81	72
Topographic Earth Models		34
USGS Astrogeology Science Center		15
Total	6,433	895