



COPE

Copenhagen Centre for Disaster Research



# TOWARDS A STANDARD LICENSING SCHEME FOR THE ACCESS AND USE OF SATELLITE EARTH OBSERVATION DATA FOR DISASTER MANAGEMENT

**Nathan Clark**

**University of Copenhagen, Faculty of Law  
Centre for International Law, Conflict and Crisis  
Copenhagen Centre for Disaster Research  
29 September, 2016**



COPE

Copenhagen Centre for Disaster Research



# Committee on Earth Observation Satellites (CEOS)

HOME ABOUT CEOS OUR WORK MEETINGS DATA & TOOLS RESOURCES CONTACT US



## Viewing Earth Serving Society

Learn More >

--	--	--	--	--	--

Mission: CEOS ensures international coordination of civil space-based Earth observation programs and promotes exchange of data to optimize societal benefit and inform decision making for securing a prosperous and sustainable future for humankind.

## CEOS – 59 Agencies operating 138 satellites!

CEOS Agencies (31 Members & 28 Associates) from all over the world are responsible for:

- Providing leadership within CEOS
- Powering and sustaining CEOS activities
- Generating new and innovative ideas and initiatives

CEOS is the mechanism that brings these organisations together to collaborate on missions, data systems, and global initiatives that benefit society and align with their own Agency missions and priorities.

<http://ceos.org>



# COPE

## Copenhagen Centre for Disaster Research



*"The primary objective of the RO is to offer a dedicated showcase where end users and stakeholders can easily find and use EO data and information for disaster recovery activities."*

### Our Work

#### Working Groups

- WGCapD
- WGCV
- WGClimate
- WGDisasters
  - Flood Pilot
  - Seismic Hazards Pilot
  - Volcano Pilot
  - Recovery Observatory**
  - Meetings
  - Documents
  - Contact Us

#### WGISS

- Virtual Constellations
- Ad Hoc Teams
- Other CEOS Activities

CEOS / Our Work / Working Groups / WGDisasters / Recovery Observatory

## Recovery Observatory

On a global basis, disasters strike regularly, in both developed and developing countries. Occasionally however, disasters take on monumental proportions, either because of particularly vulnerable populations, a dramatic natural event, or exceptionally unfortunate circumstances. Hurricane Katrina, the Haiti Earthquake, Typhoon Haiyan or the Great East Japan tsunami are examples of catastrophes that hold a special place in our collective memories as mega-disasters from which populations and governments take years to recover and rebuild.

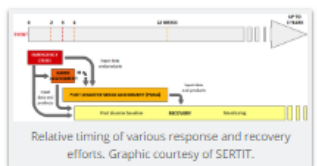
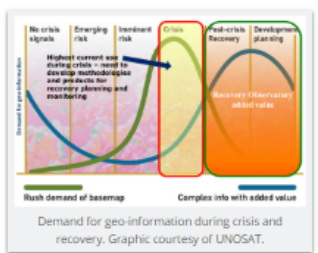


View of Tacloban after passage of Cyclone Haiyan, photo by Henry Donati / Department for International Development

In the immediate aftermath of a disaster, satellite-based Earth Observations (EO) are increasingly used to estimate impact. Grading maps are produced to show damage and to support the response and early recovery process. Focusing on response, governments have come together in partnership to act more efficiently through mechanisms such as the International Charter Space and Major Disasters, Sentinel-Asia and the Copernicus Emergency Management Services. These programmes place satellite data in the hands of experts who quickly generate information products. After the initial response to the crisis however, much of the satellite data acquired is no longer available for distribution, and new data are often not collected.

While satellite data could be made available, it is not acquired either because

users are not aware of the possibility of its use, or because the benefit of its application to mid and long-term recovery planning and monitoring has yet to be clearly demonstrated to the international recovery community and the national governments of affected areas. In some cases, the necessary data is only available commercially, requiring the demonstration of a greater benefit before users begin to exploit its potential.



Where satellite data has been used to track recovery efforts it has proven extremely useful. After the Haiti earthquake, the French space agency CNES partnered with other organizations to make satellite data available from before and after the event, over a period of several years. Several projects benefitted from this resource, providing baseline mapping to show the vulnerability of buildings to run-off risk, for example, or tracking the evolution of tent villages for the Red Cross, as shown in the figure below.



GEOSPATIAL SERVICES

# End User License Agreement (EULA)

## RADARSAT-1 End User License Agreement

IMPORTANT - READ CAREFULLY BEFORE OPENING DATA PACKAGE

THIS DOCUMENT IS A LEGAL AGREEMENT BETWEEN YOU, THE CANADIAN SPACE AGENCY ("CSA") AS OWNER OF THE DATA AND MDA GEOSPATIAL SERVICES INC. AS MASTER LICENCEE FROM CSA OF THE DATA. OPENING THE ENCLOSED DATA PACKAGE MAKES YOU THE END USER (THE "LICENCEE") OF THE DATA CONTAINED THEREIN AND INDICATES YOUR ACCEPTANCE OF THE TERMS AND CONDITIONS IN THE LICENCE AGREEMENT AND LIMITED WARRANTY (COLLECTIVELY THE "LICENCE"). IF YOU DO NOT AGREE WITH THE TERMS AND CONDITIONS, YOU SHOULD, WITHOUT BREAKING THE SEAL, RETURN THE ENCLOSED PACKAGE AND THE OTHER ITEMS THAT ARE PART OF THIS PRODUCT WITHIN TWO (2) WEEKS OF RECEIPT TO MDA GEOSPATIAL SERVICES INC. AND YOU WILL RECEIVE A FULL REFUND.

BY OPENING THIS PACKAGE, THE LICENCEE ACKNOWLEDGES THAT IT HAS READ THIS LICENCE, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. THE LICENCEE ALSO AGREES THAT THIS LICENCE IS THE COMPLETE AND EXCLUSIVE AGREEMENT BETWEEN THE PARTIES AND SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, ANY OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER HEREIN. THIS LICENCE CANNOT BE MODIFIED OR RESCINDED, NOR MAY ANY OF ITS TERMS BE CANCELLED OR WAIVED.

**GRANT OF LICENCE:** The enclosed package contains CSA Data, Data Products and accompanying written materials (collectively the "Data") containing intellectual property rights proprietary to CSA and under licence to MDA Geospatial Services Inc. and its sublicensee(s).

The Licencee agrees that the Data may be used only for the internal business use of the Licencee and may not be reproduced, published, distributed, sold, leased, rented, licensed, copied or disposed of in any other manner. The Licencee acknowledges that the Data is a valuable and unique asset and is disclosed to the Licencee on the basis that it represents confidential information. The Licencee will only disclose the Data to its employees, contractors and consultants directly related to the Licencee's internal use of the Data. In addition, the Licencee agrees to take appropriate action, by instruction, agreement or otherwise, with any persons or organizations permitted access to the Data, including appropriate security measures to prevent illegal disclosure, all so as to enable the Licencee to satisfy its obligations contained herein.

Use of the Data by anyone other than the Licencee shall constitute infringement of these rights. Upon payment for the use of the Data, MDA Geospatial Services Inc. grants to the Licencee a limited, perpetual, non-exclusive licence to use this copy of the Data. This Licence certifies the Licencee to:

- make the authorized number of internal copies of the Data in support of the Licencee's use of the Data but not to network or distribute the Data for Licencee's use or otherwise;
- use the Data solely for internal purposes of the Licencee. Contractors or consultants working for the Licencee may have access to the Data for purposes related to the Licencee's internal use of the Data; and
- the purchaser agrees to respect CSA copyright interest and, in particular, shall not distribute or sell RADARSAT Derived Image Products (DIP) or copies thereof unless they have been authorized to do so in writing from MDA Geospatial Services Inc. DIPs include but are not limited to, mosaics, geocoding, sub-scenes and sub-sampling.
- reproduce and distribute Value-Added Products from the Data where "Value-Added Products" are defined as Data that includes a significant addition of other information including but not limited to:
  - manual and digital interpretation and classifications of the Data or Data Product
  - products derived from the Data and Data Products and which do not retain the pixel structure of the original Data or Data Product such as Digital Terrain Models; and
  - imagery obtained by combining Data from two or more sensors or satellites.

CSA and MDA Geospatial Services Inc. reserve all rights not specifically granted to Licencee. The Licencee will be held legally responsible for any copyright infringement that is caused or encouraged by its failure to abide by the terms of this Licence. For greater certainty, the Licencee may not copy, modify or transfer the Data, in whole or in part, other than as expressly set out in this Agreement.

**OWNERSHIP OF DATA:** The Licencee owns the magnetic or other physical media on which the Data is originally or subsequently recorded or fixed, but an express condition of this Licence is that CSA retains title and ownership of the Data recorded on the original diskette copy and all subsequent copies of the Data, regardless of the form in or media on which the original and other copies may exist. This Licence is not a sale of the original Data or any copy, translation or compilation thereof, in whole or in part. The access to and use of the Data does not grant the Licencee any right to use, without prior written consent, any trademarks, tradenames or logo of CSA or others.



GEOSPATIAL SERVICES

**RESTRICTION ON TRANSFER:** This Licence and the Data may not be transferred to anyone without the prior written consent of MDA Geospatial Services Inc. Any transferee of the Licence shall be bound by the terms and conditions of this Licence. The Licencee is strictly prohibited from distributing, leasing, selling or otherwise disposing of the Data. For the purposes of this Licence, any distribution or disposition by Licencee to any branch, agency, office, division, subdivision, subsidiary or affiliate of the Licencee is strictly prohibited without the consent of MDA Geospatial Services Inc. The Licencee shall not reverse engineer, decompile or disassemble the Data or transfer the Data to another machine readable language, or attempt any foregoing.

**TERMINATION:** This Licence will terminate automatically without notice from MDA Geospatial Services Inc. if (i) the Licencee fails to comply with any of its provisions, (ii) the Licencee becomes insolvent or bankrupt, or (iii) the Licencee passes a resolution for the winding up of its affairs. Upon termination, the Licencee shall destroy all copies of the Data and any accompanying written materials, including any modified copies, translations or compilations thereof, if any.

**GOVERNING LAW:** This Licence is governed by the applicable laws of Canada and the Province of British Columbia, and shall enure to the benefit of CSA and/or MDA Geospatial Services Inc., their successors and assigns. The parties irrevocably and specifically attorn to the exclusive jurisdiction of the Courts of the Province of British Columbia. The parties expressly exclude the application of the United Nations Convention on Contracts for the International Sales of Goods and the implementing legislation thereto.

**DISCLAIMER OF WARRANTY AND LIMITED WARRANTY:** the Licencee assumes the entire risk as to the results and the performance of the Data. The Data is provided "as is" without warranty of any kind, other than MDA Geospatial Services Inc. warrants that the storage media on which the Data is supplied to Licencee is free from defects in materials and workmanship under normal use and service for a period of ninety (90) days from the date of purchase. CSA's entire liability and the Licencee's exclusive remedy with respect to the Data is, at MDA Geospatial Services Inc.'s option, to either (a) return the purchase price paid by the Licencee directly to MDA Geospatial Services Inc. or distributor of the Data, whichever is less or (b) replace the Data that does not meet this Limited Warranty.

In no event shall CSA or anyone else who has been involved in the creation, production, distribution or delivery of the Data, be liable for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of business information, and the like, or any consequential damages) arising out of or resulting from the use of or inability to use the Data or the performance of the Data, storage media or other CSA provided material, whether in an action in contract or tort, including, but not limited to, negligence.

Except as provided above, CSA and MDA Geospatial Services Inc. disclaim all warranties, either expressed or implied, including but not limited to implied warranties of merchantable quality, merchantability, durability or fitness for a particular purpose, with respect to the Data and any accompanying written materials.

THE ABOVE IS THE ONLY WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, IN LIEU OF ANY OTHER WARRANTY INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, THAT ARE MADE BY CSA AND MDA GEOSPATIAL SERVICES INC. FOR THIS PRODUCT.

ORAL OR WRITTEN INFORMATION OR ADVICE OR OTHER AFFIRMATION OR FACT INCLUDING, BUT NOT LIMITED TO, STATEMENTS REGARDING PERFORMANCE OF DATA GIVEN BY CSA AND/OR MDA GEOSPATIAL SERVICES INC., THEIR AGENTS OR EMPLOYEES, MDA GEOSPATIAL SERVICES INC.'S DEALERS OR DISTRIBUTORS, SHALL NOT CREATE ANY OTHER WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS LIMITED WARRANTY AND THE LICENCEE MAY NOT RELY ON ANY SUCH INFORMATION OR ADVICE.

### LIST OF DERIVED IMAGE PRODUCTS (DIPs):

- Sub-sampled scenes, sub-scenes and imagettes
- Basic image processing such as speckle-filtering, application of LUT, histogram equalization, contrast stretching, etc.
- Coloured composite image using multiple data sets
- Non-orthorectified mosaic with or without a simple layout
- Orthorectified scene or sub-scene derived from a DTED Level 0 or 1 or 2 DEM with or without a simple layout
- Orthorectified mosaic derived from a DTED Level 0 or 1 or 2 DEM with or without a simple layout
- Georeferenced space maps with index map, mapsheet reference, layout, embedded names, etc.
- Geocoded space maps with index map, mapsheet reference, layout embedded names, etc.
- Orthorectified space maps with index map, mapsheet reference, layout embedded names, etc. Orthorectification performed with a DTED Level 0 or 1 or 2 DEM

Source: <http://mdacorporation.com/docs/default-source/licence-agreements/geospatial-services/radarsat-1-eula-2007.pdf?sfvrsn=6>



COPE

Copenhagen Centre for Disaster Research



## Stage 1: Standard License Agreement

- First Analysis: Identify common (and conflicting) terms and conditions
  - Definitions (categorization of data)
  - Permitted Uses
  - Ownership and Attribution
  - Registration and Reporting
- Licenses: TerraSAR-X/ TanDEM-X, Pleiades, COSMOS-SkyMed, ALOS-2



## Common Ground: Structurally licenses are similar.

- Registration (online and written)
- Permitted Uses
  - Project specific
  - Non-commercial
- Categorization: Products and Metadata
  - Primary Data (standard, original, raw, unprocessed)
  - Primary Product (protected, characteristics of primary data still identifiable and/or could be via reverse engineering)
  - Derived Product (significant irreversible modifications)
    - Value-added
  - Metadata (ancillary data, support data, information)
- Ownership (IPR) (Primary Data and Products)
  - Attribution (All Products)
- Other conditions (e.g. liability, warranties, terms, publication/print specifications, sublicensing)



**Conflicts:** Licenses are complex, restrictive and unique for each data generator/sensor.

Main issues: Access and Use

If the RO was triggered today:

- Users must register with each data provider separately.
  - Different registration requirements and domestic procedures for approving users/requests.
- Permitted uses
  - Rights for use, reuse, and sharing of products and information varies between licenses.



COPE

Copenhagen Centre for Disaster Research



## Stage 2: License Template

- Harmonize structural elements
  - Language and wording
  - Terminology and definitions
  - Uses conditions
  - Waive non-essential elements
- Other considerations...
  - Domestic policies (users, data types, etc.)





## Stage 2: License Template

### EULAs

- RADARSAT-2 End User License Agreement Single User License
- RADARSAT-2 SOAR Loan Agreement
- NextView Imagery End User License Agreement
- General Conditions (and License) for the Provisions of COSMO-SkyMed Products
- Non-Exclusive License to Use Pleidaes Satellite Products Applicable to Authorized Institutional Users
- SPOT Image Corporation – US Domestic Disaster Relief License
- User License for the Utilization of TerraSAR-X/TanDEM-X Data and Products for Scientific Use
- DigitalGlobe End User License Agreement
- ESA Terms and Conditions for the Use and Distribution of Sentinel Data
- CEOS Contribution to the GEO Geohazard Supersite: Data Access and License Conditions

### International Legal Instruments / Policy Guidelines

- UN Principles Relating To Remote Sensing Of The Earth From Outer Space ( A/RES/41/65)
- Charter On Cooperation To Achieve The Coordinated Use Of Space Facilities In The Event Of Natural Or Technological Disasters Rev.3 (25/4/2000).2
- Creative Commons Attribution-Noncommercial 4.0 International Public License
- GEO Report on Data Sharing Principles Post-2015 and Mechanisms to Ensure Legal Interoperability of Shared Data: Document 8
- .....



COPE

Copenhagen Centre for Disaster Research



## Current Status

Second round of feedback from agencies.

Ideally:

- Ready for RO
- Broader application (disaster phases, adopted by other organizations)



COPE

Copenhagen Centre for Disaster Research



Thank You



<http://swfound.org/>