Using Volunteered Geographic Information for Achieving the Sustainable Development Goals

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2030 Agenda

Space contributing to sustainable development

- Millennium Development Goals
  - In effect from 2000-2015
  - Successful at focusing attention and encouraging action
- Sustainable Development Goals
  - Renewed interest
  - ICTs seen as key resource
  - Variety of actors & industries

How can space technology help and what is needed to enable that?

Sustainable Development

- What is it?
  - Also known as international aid, global development, foreign aid, development assistance
  - Long-term solutions to problems by working to improve economic, political and social systems in sustainable way
- How is it carried out?
  - Project lifecycle: planning, implementation, monitoring & evaluation
- Who are the stakeholders?
  - Governmental organizations, intergovernmental/multi-lateral/regional organizations, private donor entities, non-governmental organizations, contracting companies, developing country governments, space agencies, manufacturers and operators

Volunteer Geographic Information

- **Crowdsourcing, Community Remote Sensing, Neogeography**

"Harnessing of tools to create, assemble, and disseminate geographic data provided voluntarily by individuals"

"Combining remote sensing with citizen science, social networks, and crowdsourcing to enhance the data obtained from traditional sources"

- Types: Local citizens verify and add details to imagery such as in the case of community mapping or when decentralized volunteers process and annotate recent satellite imagery such as in the case of disaster or crisis mapping
- Benefits: inexpensive, localized data, timely

Applications

Use of satellite imagery and crowdsourcing well known as a tool in disaster management and response but similar methods are useful across all the goals in a variety ways

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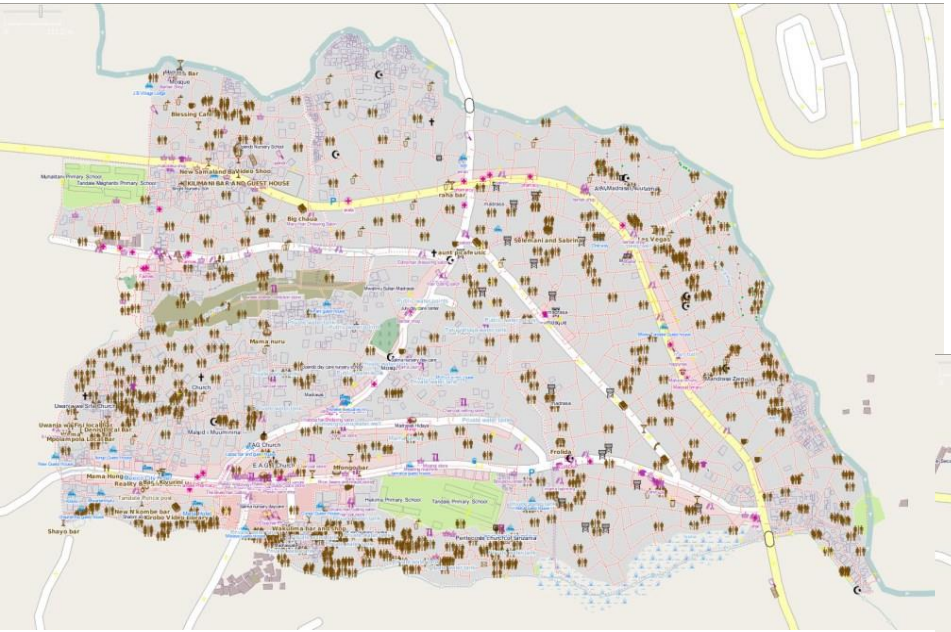
Crowdsourced Community Mapping

- Dar Ramani Huria project in Dar es Salaam, Tanzania
- Successful project with demonstrated results and multiple partners



- Yet, re-integration of new data and use by the government is hampered by lack of clear processes

Source: OpenStreetMap

Moving Forward

Efforts are underway in each category but difficulties remain

- Technical tools
- Data quality
- Licensing
- Organizational culture
- Privacy concerns

How can these be constraints be further reduced?

- International space governance framework and activities as:
  - A facilitator of dialogue, training, tools development
  - A convener between the various stakeholders
  - A disseminator of best practices, law

Secure World Foundation

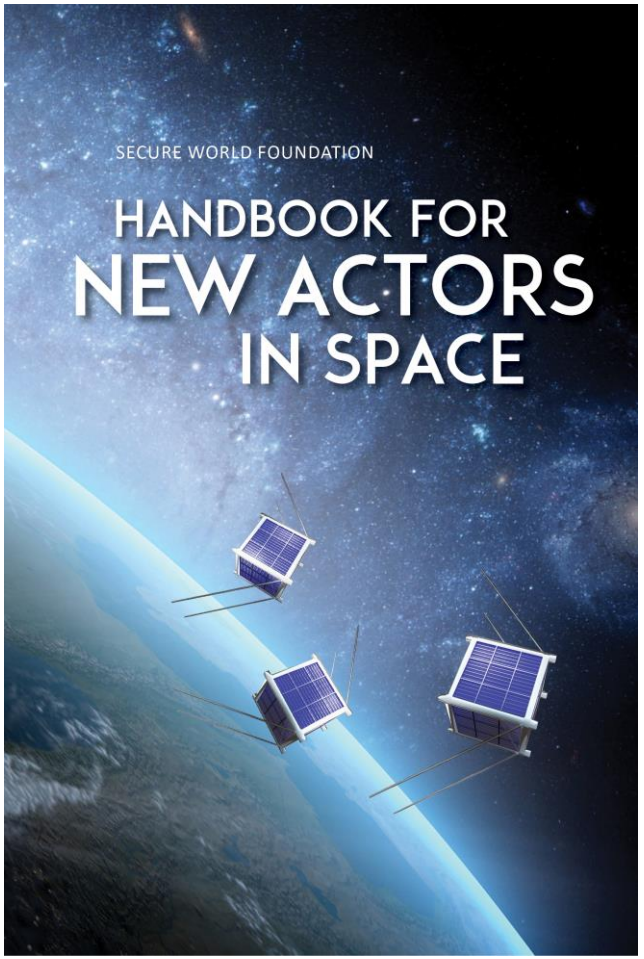
Secure World Foundation ***is a private operating foundation*** that promotes cooperative solutions for space sustainability

- **Our vision:** The secure, sustainable and peaceful uses of outer space contributing to global stability and benefits on Earth

- **Our mission**: To work with governments, industry, international organizations, and civil society to develop and promote ideas and actions to achieve the secure, sustainable, and peaceful uses of outer space benefiting Earth and all its peoples

SWF Handbook for New Actors in Space

- **Goal:** Create a publication that provides an overview fundamental principles, laws, norms, and best practices for safe, predictable, and responsible activities in space
- **Two specific audiences:**
  - Countries developing space programs and/or having to oversee and regulate their first satellites
  - Universities and start-up companies that are developing/operating satellites
- **Electronic copies** are available through the SWF website, free of charge: **www.swfound.org/handbook**



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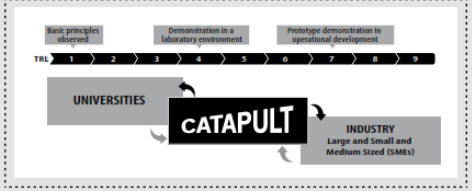
Promoting Cooperative Solutions for Space Sustainability

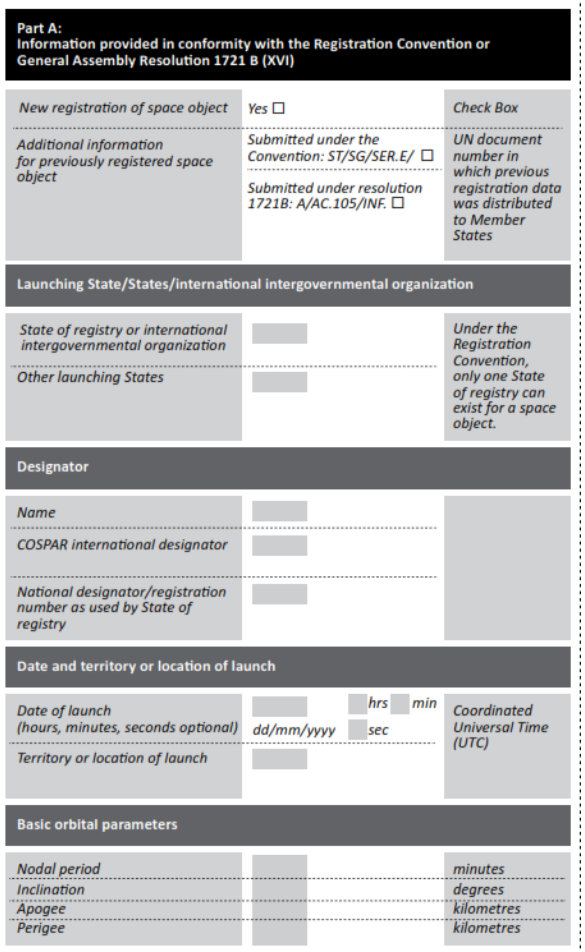
Contents

- Chapter 1 – International framework
- Chapter 2 – National policy and administration
- Chapter 3 – Responsible space operations

Case Study:
The United Kingdom Satellite Applications Catapult

The United Kingdom Satellite Applications Catapult was established by the government of the United Kingdom (UK) in May 2013 with the goal of creating economic growth in the UK through supporting the development, commercialization, and use of satellite applications. According to its Delivery Plan 2015–2020, the Catapult (Figure 8) aims to promote satellite application and technology development and to help domestic industry "bring new products and services more rapidly to market." The Satellite Applications Catapult is one of 11 "Catapults" operating in the UK, each focusing on different technologies and application areas. The Catapult operates as a private, not-for-profit research organization. It is governed by a board, which includes representation from the United Kingdom Space Agency (UKSA) and from Innovate UK—a government agency focused on fostering technology and economic development.





Part A:
Information provided in conformity with the Registration Convention or General Assembly Resolution 1721 B (XVI)

New registration of space object	*Yes* ☐	*Check Box*
Additional information for previously registered space object	*Submitted under the Convention: ST/SG/SER.E/* ☐ *Submitted under resolution 1721B: A/AC.105/INF.* ☐	*UN document number in which previous registration data was distributed to Member States*

Launching State/States/international intergovernmental organization

State of registry or international intergovernmental organization		*Under the Registration Convention, only one State of registry can exist for a space object.*
Other launching States		

Designator

Name		
COSPAR international designator		
National designator/registration number as used by State of registry		

Date and territory or location of launch

Date of launch (hours, minutes, seconds optional)	*hrs* *min* *dd/mm/yyyy* *sec*	*Coordinated Universal Time (UTC)*
Territory or location of launch		

Basic orbital parameters

Nodal period		*minutes*
Inclination		*degrees*
Apogee		*kilometres*
Perigee		*kilometres*

UNOOSA International Registry Form

Questions?

Thanks.

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Sources

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2. Williamson R.A., Antoniou N., 2012, Data Policies in support of Climate Change and Disaster Management Applications, IAC- 12- E.3.1.1
3. OpenStreetMaps. URL: http://ramanihuria.org/focus-wards/tandale/