



## United Nations/Austria Symposium

Space for Development Profile and Space  
Solutions Compendium: Pilot Project results  
and lessons learnt

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Office for Outer Space Affairs



# Outline

- Background
- Description of the Space for Development Profile
  - Form
  - Why these indicators
- Description of the Space Solutions Compendium
  - Formats
- Results and Methodology
- What is next



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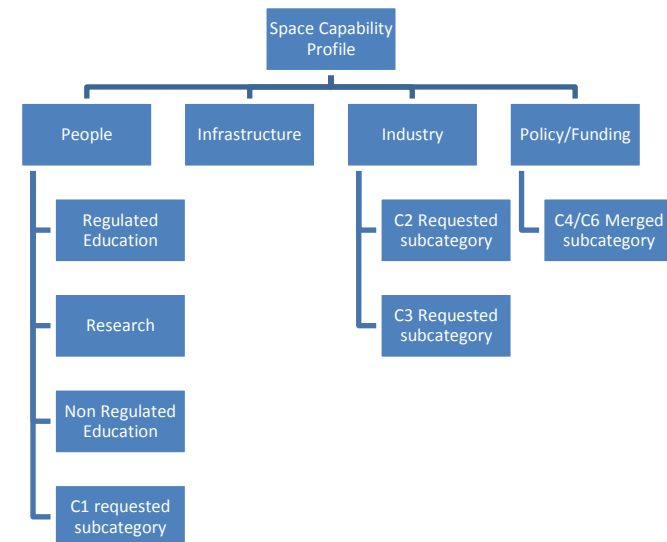


# Description of the SDP



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- Space Capabilities Profile:
  - Four categories in line with the four pillars
    - People (Space Society)
    - Infrastructure (Space Accessibility)
    - Industry (Space Economy)
    - Policy/Funding (Space Diplomacy)
  - Inside each category there are indicators
  - Indicators are mapped to SDGs or other global indicators if possible
- SCP and SSC are **modular**
- SCP is tailored to a country





- Features:
  - Linked to other Global indicators (e.g. SDGs)
  - Shared between UNOOSA and the country
    - On a second step aggregated data can be published
  - Possible to measure the impact of capacity building activities using the profile (challenge)
  - Possible to link the solutions to one or several categories (People, Infrastructure, Industry, Policy/Funding)
  - Generic and Specific: **Modularity**
    - UNOOSA can work with Countries to Create more Specific Indicators related to their Strategy and indicator proven useful (and “collectable”) will be added



## PEOPLE

### — Regulated Education

- STEM (Number of Graduates (PhD, Masters, Degrees), Students, Universities, Professors, Scholarships)
- Space Law (Number of Graduates (PhD, Masters, Degrees), Students, Universities, Professors, Scholarships)

### — Non Regulated Education

- Number of Public Libraries and % of Books related to Space (STEM/Space Law)
- Number of Museums/exhibits and number of visitors
- Internet Searches
- Access to Online Resources

### — Research

- Number of Researchers in Space Field (related to SDG 9, indicator 9.5.2 researchers/10<sup>6</sup> inhabitants)
- Number of Space Related Publications in peer reviewed journals
- Number of Space Related Patents



## INFRASTRUCTURE

- Access to Ground Segment Capabilities
- Access to Launch Capabilities
- Access to Space-based assets
  - Space Research Platforms (e.g. microgravity, technology and research)
  - EO satellites
  - Telecommunication Satellites
  - Navigation Satellites
- Access to Simulators/Testbeds



## INDUSTRY

- % of Medium-High Tech Industry Value added in total value added
  - %devoted to space technology(SDG 9, indicator 9.9.b.1)
- Number of Companies in Space Field
- Number of Workers
- Space Industry turnover



## POLICY

- Number of agreements, MoUs, participation international programmes... related to Space
- Policies
- **Funding** (SDG 9, target 9.5.1 research and development expenditure as proportion of GDP)
  - Research funding allocated to Space
  - Budget of STEM/Space Law Universities
- Participation in International Programmes (e.g. ISS, COSPAR-SARSAT)
- Number of institutions making use of space data



# Description of the SDP

**Space for Development Profile**

**Completing the profile:**

The profile has four sheets to collect the data, each one for a category of the SDP (**People**, **Infrastructure**, **Industry** and **Policy/Funding**, each tab has a colour for easy reference). There is an additional sheet for **Comments** (red sheet).

The sheet for comments (red sheet) is to provide more details on how the indicator is computed, or to provide links, links or document references supporting the information provided by the indicator. For each indicator there is the possibility of providing data from 2010, in case it is possible to provide data from previous years, when it is not possible, please mark the field as N/A.

Indicators are referred as C for core indicators (each country can develop additional in conjunction with UNOOSA, which then would either be marked by the ISO country code for national indicators or E for extended set).

Please note that there are indicators that have sub-indicators (e.g. C.P.1.1 Number of STEM Graduates per year, C.P.1.1 Females, C.P.1.2 Males). These are not to be commented in the comment sheet, as only the comment for the indicator will be considered.

When one indicator cannot be measured, please indicate it with N/A (not available) and a comment in the comment sheet (red sheet). Even if the comment is "data not available in our institution" is valuable.

Please refer to specific instructions below.

**Specific Instructions for indicators under People:**

Some of the indicators have sub-indicators, to enable more detailed analysis, if the value of the subindicator is not available (e.g. the number of STEM graduates is available, but not the number of STEM female graduates, please set the value of the subindicator as N/A (in this case C.P.1.1 to N/A)).

INDICATOR C.P.5 When it is not possible to indicate the number of universities of the country offering STEM, please indicate the number of the ones offering STEM which are collaborating with the center completing the survey (please indicate it in the comment sheet under indicator C.P.5). If the center completing the survey offers university courses, please list them in the comment sheet under indicator C.P.5.

INDICATOR C.P.6 and C.P.8: Space field to be considered in the broad sense, from astronomy to rocket science, materials, earth observation, satellite information systems.

INDICATOR C.P.12 and C.P.13: If the center filling the profile has a website or online course materials, number of visits (annual), if possible, to provide more information in the comments, e.g. geographic distribution of visits, devices used. If not, please mark it as N/A.

**Specific Instructions for indicators under Infrastructure:**

Some of the indicators have sub-indicators, to enable more detailed analysis, if the value of the subindicator is not available, please set the value of the subindicator to N/A.

Please use the comment sheet to detail the infrastructure if the information is available.

INDICATOR C.M.3 and, in particular sub-indicator C.M.3.4, cover human spaceflight assets.

**Specific Instructions for indicators under Industry:**

There is an indicator that is a Sustainable Development Indicator, which helps to frame the information, this indicator is named SDG 9.1.1. The core indicators for the Space for Development Profile-Industry have labels

- Form developed
- New revision to be issued taking into account the results of the pilot



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# Space Solutions Compendium



# Description of the SSC

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# Pilot Project



## Pilot Project Objectives

- Establish contact with a set of countries willing to participate
- 
- Refine the Space for Development Profile and Identify lessons learnt
- 
- Develop a methodology to gather data from open data sources



## Contact and engage

- Four countries and UNECA showed interest and the information was distributed
- Countries eager to participate but sometimes the data is not available with our contact points



## Refine and extract lessons

- Sometimes is difficult to estimate the number of professionals working in the space field
  - Establishing a national database will help (UNOOSA can help also due to the network of contacts)
  - Professionals can get up-to-date information and report back on publications/patents (community building)



## Refine and extract lessons

- Non-regulated forms of education are a fantastic way of engaging and get information.
- Access to webpages is a powerful tool, you can determine not only number of access but which country or institution
  - Information can be used to build collaborations and determine interest



## Refine and extract lessons

- Industry section was too broad, it is in line with the recommendations of OECD handbook on measuring space economy



## Open Data Sources

- Identified a set of open data sources available and developed a methodology:
  - UNESCO –Education/Research/Funding
  - WIPO – PATENTSCOPE
  - UNIDO – INDSTAT database
  - UNOOSA – National Space Law database



## What is next

- Put the first version of the SSC online
- Generate first core profiles which will be available on a bilateral bases
- Establish long-term relationships for capacity-building on this basis

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+50



THANK YOU



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