
Open Science landscape in Japan (from my viewpoint)

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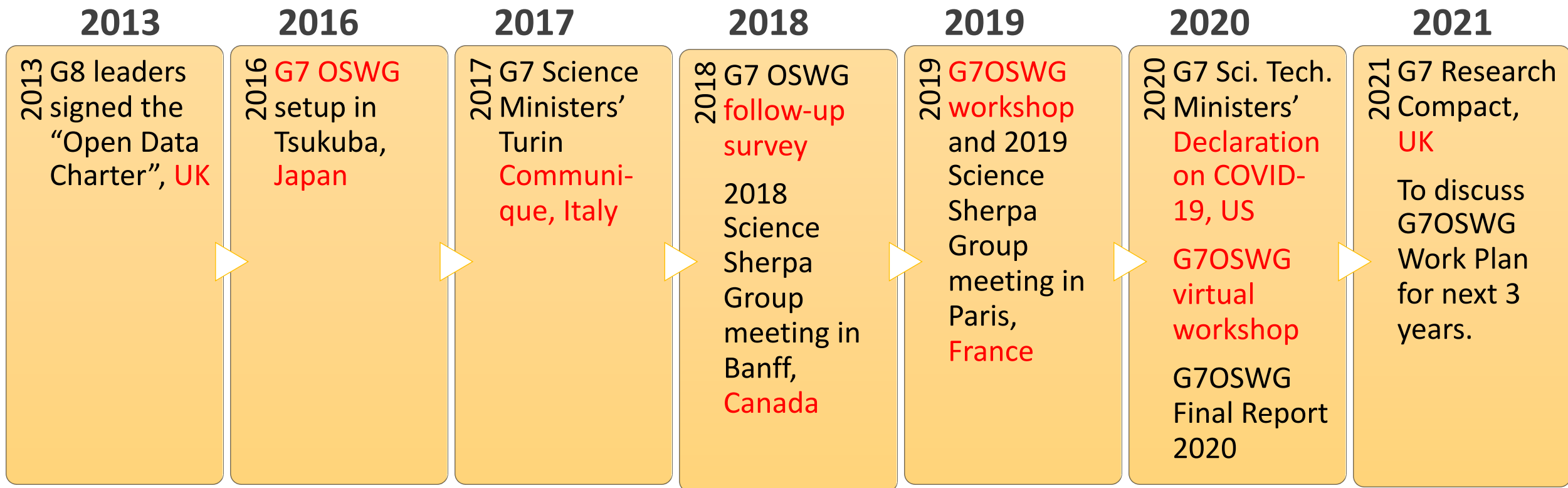
Co-chair of G7 Open Science Working Group

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NICT (Natl. Inst. Of Information & Communications Tech.), Japan

G7 Open Science Discussions and Japan

- In **2013, UK**, G8 agreement was a key for the JP govt's to start actions.
- In **2016, JP**, G7 Science Ministers agreed to establish G7 Open Science WG (G7OSWG) (co-chaired by **EC & JP**)
- Focused on 1) **incentives/rewards** for OS-practice and 2) research (data) **infrastructures**



Japanese national “Integrated Innovation Strategy”



- Cabinet Office & Natl. Expert Panel of Open Science Promotion
 - 2015: **Frist National Report** of Open Science Principles
“Opening up a new era for the advancement of science---” <https://www8.cao.go.jp/cstp/sonota/openscience/>
 - 2018: Guidelines for **data policy** (natl. research inst.)/for trusted **data repository**
- Sub-WG for building res. data Infrastructure (1st report Oct. 2019, 2nd Mar. 2021)
- “**Moonshot** Research & Development Funding Program” (by Cabinet Office)
 - promotes high-risk, high-impact R&D, including Res. Data Management with OS principles



Science Council of Japan

- **Official “Open Science” committees 2015~** (proposed by the council presidents)
 1. Dec. 2015 –July 2016: Committee for examination of Open Science promotion
 2. Dec. 2018-Sept. 2020 : Committee for deepening and promoting Open Science
 3. 2020-Sept. 2023: Committee for building & use of data infrastructure to promote OS
- **Disciplinary data** committees: informatics, bio-informatics, earth science, ...



Examples OS Practices in Japan

[Kaz Hayashi, JpGU, 2020; Adapted by Y. Murayama, 2021]

To-DO or Doing

Community engagement (for culture change)

Research Communities

1. Guideline of **Data Policy** for Natil Research Inst. (2018)

2. **DMP** by Public Funders JST, AMED, NEDO (2017-)

3. Data Management Infrastructure (RDM, IR, Search) **NII Research Data Cloud etc.** Ongoing (2020-)

4. Guideline of Research Data **Repository** (2019)

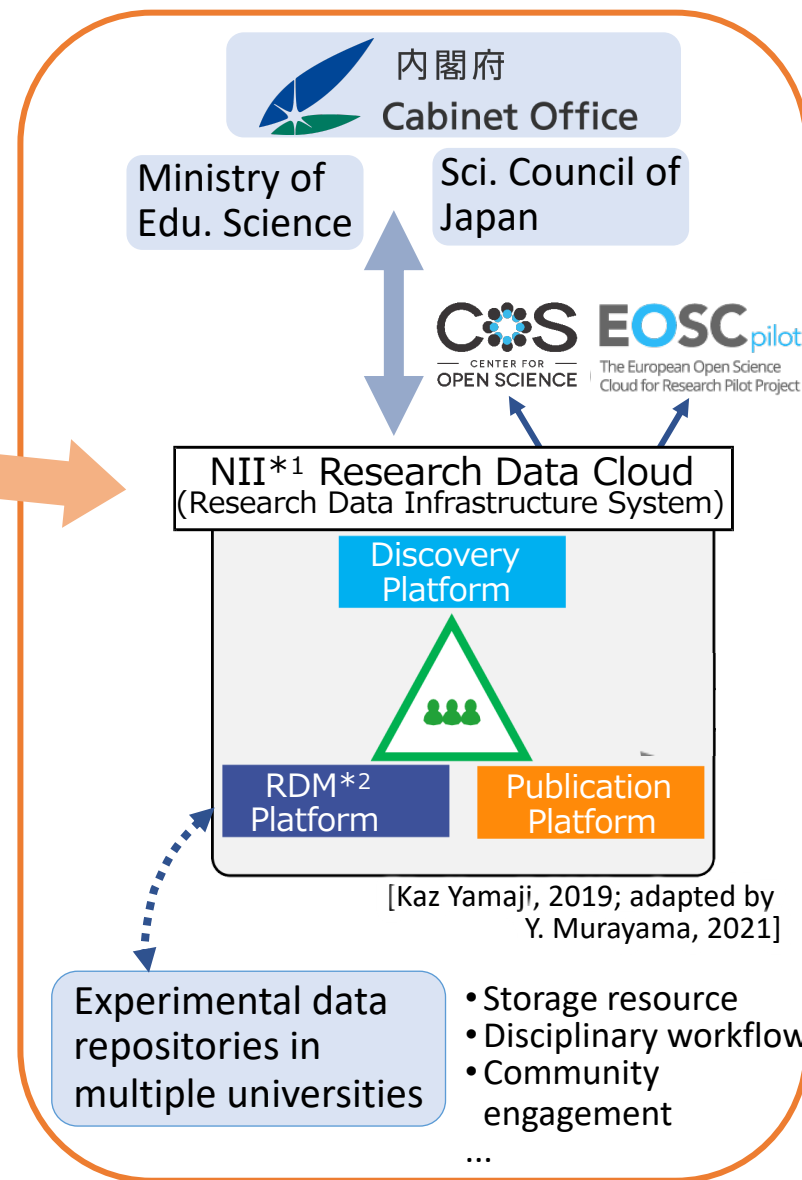


5. Association with E-journal (**Data Publishing**) JST (2021-)

6. **OS Progress Monitoring** (Natl. Inst. S&T Policy) (2019-)

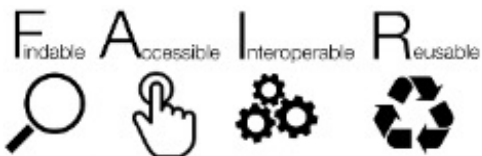
7. **Pilot program** (Cabinet Office) (2019)

“Moonshot R&D Program”



* 1) Natl. Inst. Informatics

* 2) Research Data Management



Genome data: academic data sharing incl. COVID-19

INSDC

- International Nucleotide Sequence Database Collaboration
- Consists of ENA, NCBI GenBank and DNA Data Bank of Japan
- Databases are synchronized on a daily basis
- <http://www.insdc.org>



Goal

To provide a comprehensive record of the world's nucleotide sequencing information, covering raw sequencing data, sequence assembly information and functional annotation

[Bert Overduin (2012)
Is adapted by Y. Murayama]
[Acknowledgement: M.Arita,
DDBJ, 2021]

Lessons Learned, helpful for Climate research output, research ecosystem

1. Importance was recognized of the **timely sharing of scientific knowledge and data** (likely pushing Open Science in the govt.).
(NB: Climate science seems more ready to share data. → e.g. IPCC TG-data)
2. Part of the scientific community found **needs of culture changes** in the S&T sector. The citizen, economy and governmental sectors will need also, with help of ICT infrastructure and social technology (or Digital Transformation; DX).
3. “**Society 5.0**”, a concept proposed by Japan’s govt. 5 years ago --- the Human-centric society with sophisticated fusion of cyber & physical spaces, to enable economic growth and to solve societal challenges (including SDGs etc.).
4. In 2021, the new 5-year Basic Plan started with deeper insight of DX, in the COVID-19 situation and beyond.
5. Its ultimate target is to contribute to the welfare of the human society with DX, and the society with “Trust”, giving them a global value of “Society 5.0”.