Open Innovation for Earth Observation Programmes

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«The EARSC perspective on challenges and opportunities of Open Innovation in EO Industry»

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The use of open-source software/data amongst VA industry

– *Open source is becoming more prevalent and an increasingly important part of European downstream industry capabilities.*
Given this situation, how should ESA working to ensure maximum impact on European competitiveness

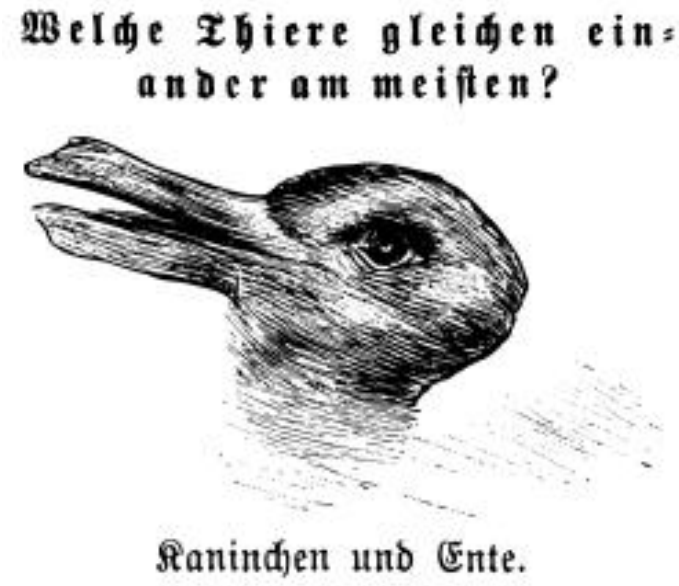
- User Requirements Data-Driven Open Innovation Software & Management
- The use of documented and open source interfaces is required
- Accessible to all in a free and open way
- Interoperability and standards
- But not “Free of charge”, so can be maintained and be at the state of the art/sustainable value-added services = means new funded projects
- Progress GAP due to COVID - A lot of tools/data shall be “maintained” or make new (economy is the main factor)
- Clear IPR (background/foreground/maintenance) – notary documentation
- Clear licensing conditions and SWM conditions/business-friendly license or set of licenses - this includes algorithm + data + methodology + technical support + documentation
- User driven applications and tools – simple handbook/well scientific documented, in order to have enlarged users/customers group
- A controlled system listing the available services/taxonomy – validation (common inventory and repository of such open source tools and components) - security

Licensing… thoughts (SW tool/s and data in a cloud environment for concurrent users – use as a service including 3 years maintenance)

- Commercial Single user
- Commercial VSmall Group user (up to 5)
- Commercial Small Group user (up to 15)
- Commercial Medium Group (up to 50)
- Commercial Large Group (up to 100)
- Commercial Unlimited
- Non Profit at 50 % of the price
- Educational/Research at 0-10 % of the price but with an MOU with the Lab to provide monthly "comments and debugging services" and at least one thesis per 10 seats, support in the documentation and white papers – like that we make new communities of developers and also there expansion of the users in the industries and governmental offices * examples of ESRI, HXG and Bentley

- Can be also by hours or by GB/TB of process data …
- Can be a final delivery of processes and data with a license to use …

The rabbit–duck illusion



two different ways of seeing: "seeing that" versus "seeing as“ = to make it be used with larger audience and make it sustainable

"Kaninchen und Ente" ("Rabbit and Duck") from the 23 October 1892 issue of Fliegende Blätter

Proposing Intelligent Integrations :

-Open access to **adapt new tools from the users after validation fully integrated with the existing innovation**(have a clear position in the market place with IPR and license) and assist with a sales % contract, collaboration – sales management

-Have customers groups as main target for expansion and growth

Challenges :

1. Establish a repeatable system for leveraging experts as part of your strategic innovation efforts. 2. Sustainability

Proposing Listing and Taxonomy after validation/documentation

(for the past and new projects mainly funded by the big organizations but not only) – main question : **who is the customer/user, is the user satisfied** ? Is the solution documented ? Is there a benchmark ?

- Scientific evidence is at the core of the technical screening criteria, defining which economic activities can be considered sustainable. The involvement of the scientific and research community will therefore be of critical importance.
- Research & Innovation produces the technologies and solutions of tomorrow and will therefore play an important role to help developers and entrepreneurs to reach or go beyond the standards and thresholds set in the Taxonomy and help keep the Taxonomy criteria up to date.
- The Taxonomy will trigger greater private investment in sustainable economic activities. As a result, those activities will benefit from increased access to finance needed to foster market uptake of innovative technologies and solutions.

Proposing

- New projects, for maintain and covering missing points
- Governance model of the Open Source Initiative ?
- Business Model – we must not think that the commercial SW and data must be stopped and not used, we must see where are the "GAPs" and fill them
- Who is using ? Who can be a new user ? Europe is missing the major user who is the governmental offices, Ministries, Municipalities etc.
- Communication and Exploitation
- Success Stories, yes EOX, Terradue…
- Internationalisation / "Booster" from the Word Bank etc. via ESA Roadmap

- *November 2016 - June 2017 /Open Source Initiative Conclusions and recommendations* ***EARSC OSI working group*** *Codrina Ilie, Antonio Tabasco and colab.*

1. combination of catalogue and repository
2. business-friendly license or set of licenses be supported/ license compatibility
3. governance model recommended by this group is based on the meritocratic model developed by OSS Watch Foundation

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European Association of Remote Sensing Companies