Monitoring Open Science policy using a regional CRIS: the Flanders case with FRIS

CRIS2022 - Dubrovnik

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1. Introduction & Open Science in Flanders
2. FRIS: regional CRIS of Flanders
3. Monitoring Open Science using FRIS
Open Science policy in Flanders

• Flemish Government & EOSC: initiative in 2019
• Investment of 5 mio € per year for 5 years
• Structure:
  - Flemish Open Science Board (FOSB)
  - Flemish Research Data Network (FRDN)
  - Working groups
• Role of FRIS:
  - Hub for metadata on datasets towards EOSC
  - Making research information more accessible and findable
  - Monitoring of Open Science KPI’s
FRIS: Flanders Research Information Space

- CRIS: publicly funded research performed in Flanders
- Connected with institutional CRIS systems (automated flow) | If not: manual input also possible
- Exchange format: CERIF 1.5 + fris-extensions
- Some numbers:
  - >40,000 active researchers
  - >50,000 research projects
  - >500,000 publications
  - Since very recently also information on:
    - Patents
    - Research infrastructure
    - Datasets
- Information available through portal [Researchportal.be](http://Researchportal.be) and open API’s
FRIS Objectives

- Accelerate the chain from idea to innovation by ensuring a better information flow between research institutes and innovative organisations.

- Simplifying administration through webservices.
  - Obtaining information directly from systems.
  - Requesting information just once, sharing and reusing it to get the most out of it.

- To make the government, corporate and research innovation strategy more effective and efficient.

- To make research information publicly available so that everyone can use it freely.
FRIS: organisation

- **Embedded in the Flemish Government:**
  - Department of Economy, Science and Innovation
    - Research division

- **Team FRIS**
  - 3 vte

- **Partners:**
  - Knowledge institutions (Dataproviders)
  - FWO, VLAIO, EWI (Research funders)
  - ECOOM Hasselt (Semantics & information models)
  - IT-crew (analysts, developers)
FRIS as a monitoring tool

1. Monitoring of research activities
2. Monitoring of Open Science
Monitoring of research activities
Monitoring of research activities

• FRIS: overview of research activities of publicly funded research in Flanders

• Useful tool for policy monitoring:
  - research budget on specific topics, strengths of Flanders, ...

• 2019: also basis for financial reporting of government research funding:
  - BOF (Special Research Funds) and IOF (Industrial Research Funds)
  - Transition process: concepts and definitions, identify extra information needed, extending the FRIS-datamodel, data gathering, trial runs, collecting feedback, re-iterate and optimize. Took about 3 years.
  - Results expected:
    • Less administrative burden
    • More information in FRIS
    • More accurate reports
Monitoring of Open Science
Defining the Open Science KPI’s (I)

• Goal: monitoring of progress of Open Science in Flanders

• 5 KPI’s:
  - **ORCiD KPI**: researchers that receive public funding should have an ORCiD
  - **DMP KPI**: projects that receive public funding should have a Data Management Plan (DMP)
  - **Open Access KPI**: peer-reviewed journal articles resulting from publicly funded research should become available in Open Access
  - **FAIR KPI**: Research data underlying journal articles resulting from publicly funded research should become as FAIR as possible
  - **Open Data KPI**: Research data underlying journal articles resulting from publicly funded research should become openly available.

• Intensive process with all stakeholders involved in FOSB working groups and taskforces to make definitions and set realistic goals
Defining the Open Science KPI’s (II)

• Good common understanding is crucial

• Challenge for dataset KPI’s (Open data, FAIR data):
  - Gathering and registration of datasets in its primary stage
  - Best effort to create definition, though not perfect
  - Keep KPI’s simple: eg. “limited to datasets that are underlying peer reviewed articles”

• KPI FAIR:
  - put on hold until more mature – in line with European definition

• Focus on progress in Open Science rather than on absolute figures
Defining the Open Science KPI’s (III)

**SETTING GOALS:**

- 3 possible timelines in degree of ambition: most ambitious track = shorter timeline
- Zero-measurement will determine the track
- Zero-measurement will be re-measured every year – changes of track possible

<table>
<thead>
<tr>
<th>Year to be measured</th>
<th>Track 1</th>
<th>Track 2</th>
<th>Track 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020 (zero measurement)</td>
<td>&gt;20%</td>
<td>10% - 20%</td>
<td>&lt;10% or not measurable</td>
</tr>
<tr>
<td>2021</td>
<td>30%</td>
<td>20%</td>
<td>action plan</td>
</tr>
<tr>
<td>2022</td>
<td>60%</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>2023</td>
<td>90%</td>
<td>60%</td>
<td>30%</td>
</tr>
<tr>
<td>2024</td>
<td>95%</td>
<td>90%</td>
<td>60%</td>
</tr>
<tr>
<td>2025</td>
<td>95%</td>
<td>95%</td>
<td>90%</td>
</tr>
<tr>
<td>2026</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
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</table>
Measure KPI’s using FRIS: step 1: Extend the metadatamodel

• Open Data:
  - No model yet available – developed in FOSB Working group Metadata & Standardisation
  - New model based on DataCite, extended for Open Science metrics
  - Exchange model for FRIS: based on Cerif 1.5: dfResProduct entity, with extensions for extra info like size, format, opt-outs,…

• Other extensions:
  - DMP label
  - Open Access label for publications
step 2: KPI-metrics based on FRIS-data (I)

- Translation of KPI-definitions into FRIS-metrics:
  
  E.g. Definition: “researchers that receive public funding” should have an ORCiD
  
  In FRIS: researchers that have an affiliation that is active on the reference date and have a link to a project with public funding

- Formulated in *Technical Forms* and made publicly available

- Advantages:
  - Transparancy: results are reproducible
  - Consistency: all institutions measured the same way
  - Reduces administrative burden: for those institutions already integrated
  - Increases data quality: institutions not yet connected to FRIS need to gather the same data and data quality to measure the KPI themselves
Measurement of KPI0: ORCiD through data as available in FRIS

<table>
<thead>
<tr>
<th>Reference date</th>
<th>Researchers on reference date and with Flemish funding</th>
<th>of which having an ORCiD</th>
<th>ORCiD KPI %</th>
<th>track and goal percentages</th>
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</thead>
<tbody>
<tr>
<td>1/2/2020 (zero meas.)</td>
<td>3987</td>
<td>2387</td>
<td>60%</td>
<td>track 1</td>
</tr>
<tr>
<td>1/2/2021</td>
<td>4532</td>
<td>2987</td>
<td>66%</td>
<td>30%</td>
</tr>
<tr>
<td>1/2/2022</td>
<td></td>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>1/2/2023</td>
<td></td>
<td></td>
<td></td>
<td>90%</td>
</tr>
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</table>
## Example of KPI report: details

<table>
<thead>
<tr>
<th>Institution</th>
<th>Person Data Provider ID</th>
<th>First Name</th>
<th>Last Name</th>
<th>Active affiliation on 1/02/2021</th>
<th>Project Ids Flemish funding</th>
<th>Researchers active on 1/02/2021 and with Flemish funding</th>
<th>ORCID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>PersonID1</td>
<td>Alex</td>
<td>Peeters</td>
<td>10/02/2020 - 1/01/2023</td>
<td></td>
<td>0</td>
<td>0000-0002-8552-1234</td>
</tr>
<tr>
<td>Institution</td>
<td>PersonID2</td>
<td>James</td>
<td>Mercury</td>
<td>7/05/2009 - 1/01/2023</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td>PersonID3</td>
<td>Elsa</td>
<td>Halloway</td>
<td>1/01/2008 - 1/01/2023</td>
<td>ProjectID1, ProjectID5, ProjectID8</td>
<td>1</td>
<td>0000-0003-2902-1234</td>
</tr>
<tr>
<td>Institution</td>
<td>PersonID4</td>
<td>Nancy</td>
<td>Vasquez</td>
<td>28/01/2019 - 1/01/2023</td>
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<td>0</td>
<td>0000-0002-2978-1234</td>
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</tbody>
</table>
Step 2: KPI-metrics based on FRIS-data (II)

• KPI’s measured yearly end of April – update possible end of May

• Institutions report yearly in June on Open Science activities to the FOSB, including the KPI’s

• Evaluation of Open Science initiative in 2023
Conclusion

1. Ambitious policy plan on Open Science where FRIS is the main tool to measure progress in Open Science

2. Advantages: transparancy, consistency, comparability, less administrative burden

3. Collaborative preparatory process with all stakeholders: time-consuming yet increasing common understanding, yielding better metrics and better alignment of stakeholders

4. Current framework is not an endpoint but the beginning. Metrics are an incentive to focus and make progress in Open Science
Questions?

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>> www.researchportal.be