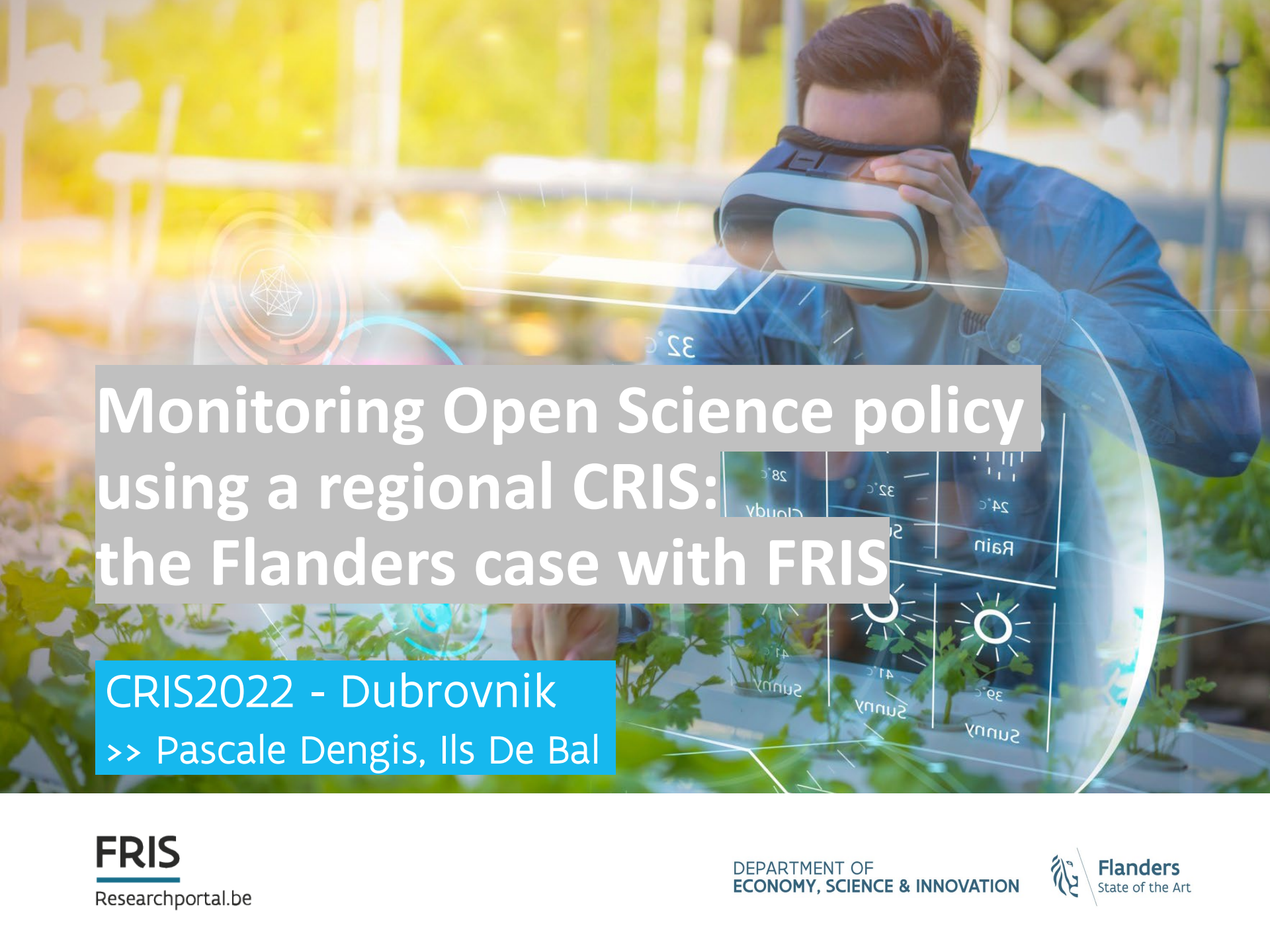


A man in a blue jacket is wearing a VR headset, looking into it with both hands. The background is a greenhouse filled with plants. Overlaid on the image are various digital elements: a circular graphic with a network diagram on the left, a large semi-transparent sphere on the right, and a weather forecast panel in the lower right showing temperature, rain, and sun icons. The main title is in a grey box, and the event information is in a blue box.

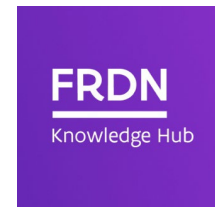
Monitoring Open Science policy using a regional CRIS: the Flanders case with FRIS

CRIS2022 - Dubrovnik
>> Pascale Dengis, Ils De Bal

- 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](https://researchportal.be)) and open API's**



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Infrastructure



(136)
Datasets

Projects

DOWNLOAD
RESULT



Knowledge institution

- ☐ Alamire Foundation (17)
- ☐ Antwerp Management School (18)
- ☐ Antwerp Maritime Academy (1)
- ☐ AP University of Applied Sciences and Arts (1)
- ☐ Artevelde University of Applied Sciences (9)

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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 untill 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**

	ORCiD KPI: Goals per track		
year to be measured	track 1	track 2	track 3
2020 (zero measurement)	>20%	10% - 20%	<10% or not measurable
2021	30%	20%	action plan
2022	60%	30%	20%
2023	90%	60%	30%
2024	95%	90%	60%
2025	95%	95%	90%
2026	95%	95%	95%

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:**

- Transparency: 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

Example of KPI report: overview

Measurement of KPI0: ORCiD through data as available in FRIS

KPI according to the definition of Open Science*

Reference date	Researchers on reference date and with Flemish funding	of which having an ORCiD	ORCiD KPI %	track and goal percentages
1/2/2020 (zero meas.)	3987	2387	60%	track 1
1/2/2021	4532	2987	66%	30%
1/2/2022				60%
1/2/2023				90%

Example of KPI report: details

Institution	Person Data Provider ID	First Name	Last Name	Active affiliation on 1/02/2021	Project Ids Flemish funding	Researchers active on 1/02/2021 and with Flemish funding	ORCID
Institution	PersonID1	Alex	Peeters	10/02/2020 - 1/01/2023		0	0000-0002-8552-1234
Institution	PersonID2	James	Mercury	7/05/2009 - 1/01/2023		0	
Institution	PersonID3	Elsa	Halloway	1/01/2008 - 1/01/2023	ProjectID1, ProjectID5, ProjectID8	1	0000-0003-2902-1234
Institution	PersonID4	Nancy	Vasquez	28/01/2019 - 1/01/2023		0	0000-0002-2978-1234

FRIS

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Flanders
State of the Art

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: transparency, 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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