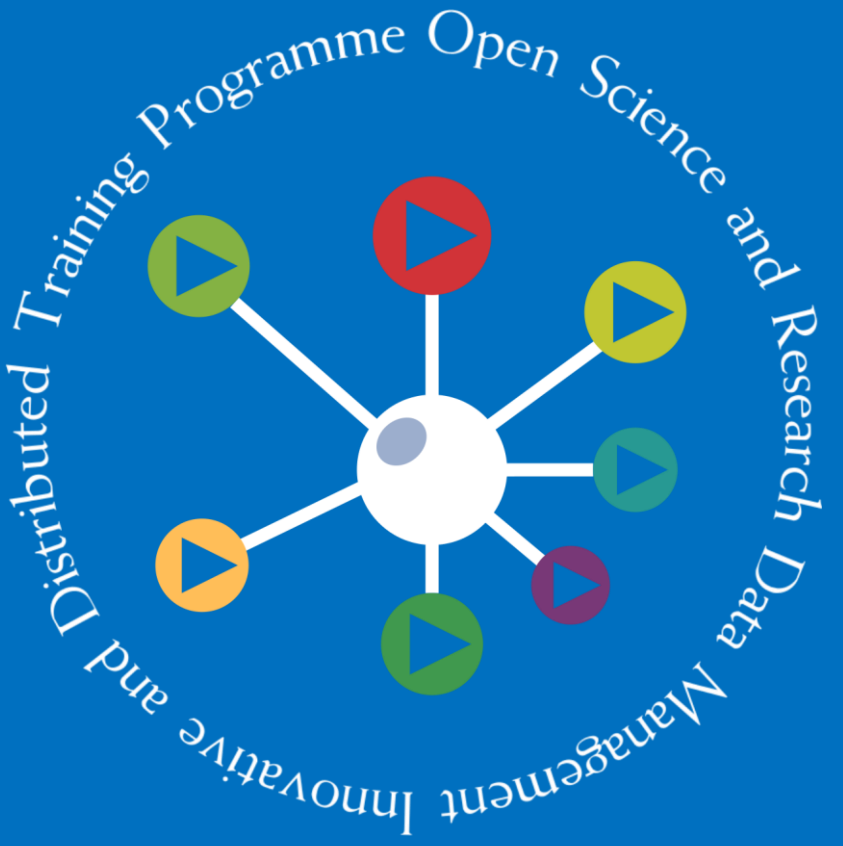
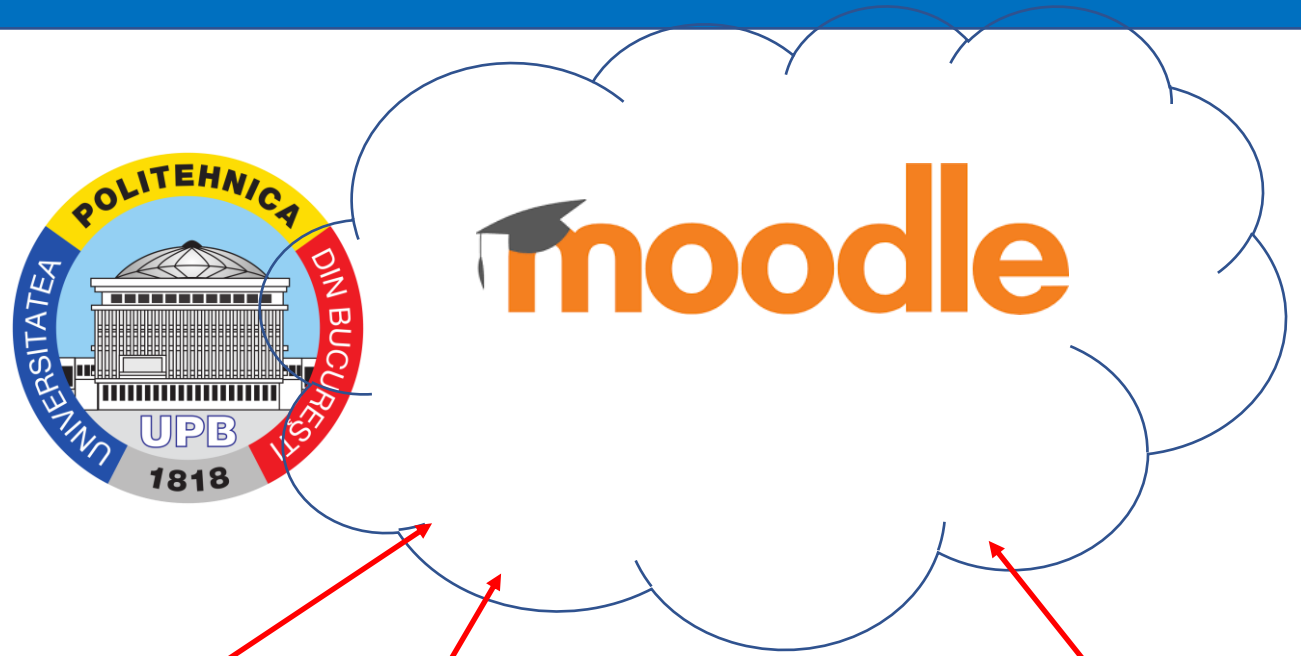
Transnational Project Meeting
- TPM & Further -

14 September 2022
Rome



Can we have at least this?



National College of Ireland

TU WIEN TECHNISCHE UNIVERSITÄT WIEN

SAPIENZA UNIVERSITÀ DI ROMA

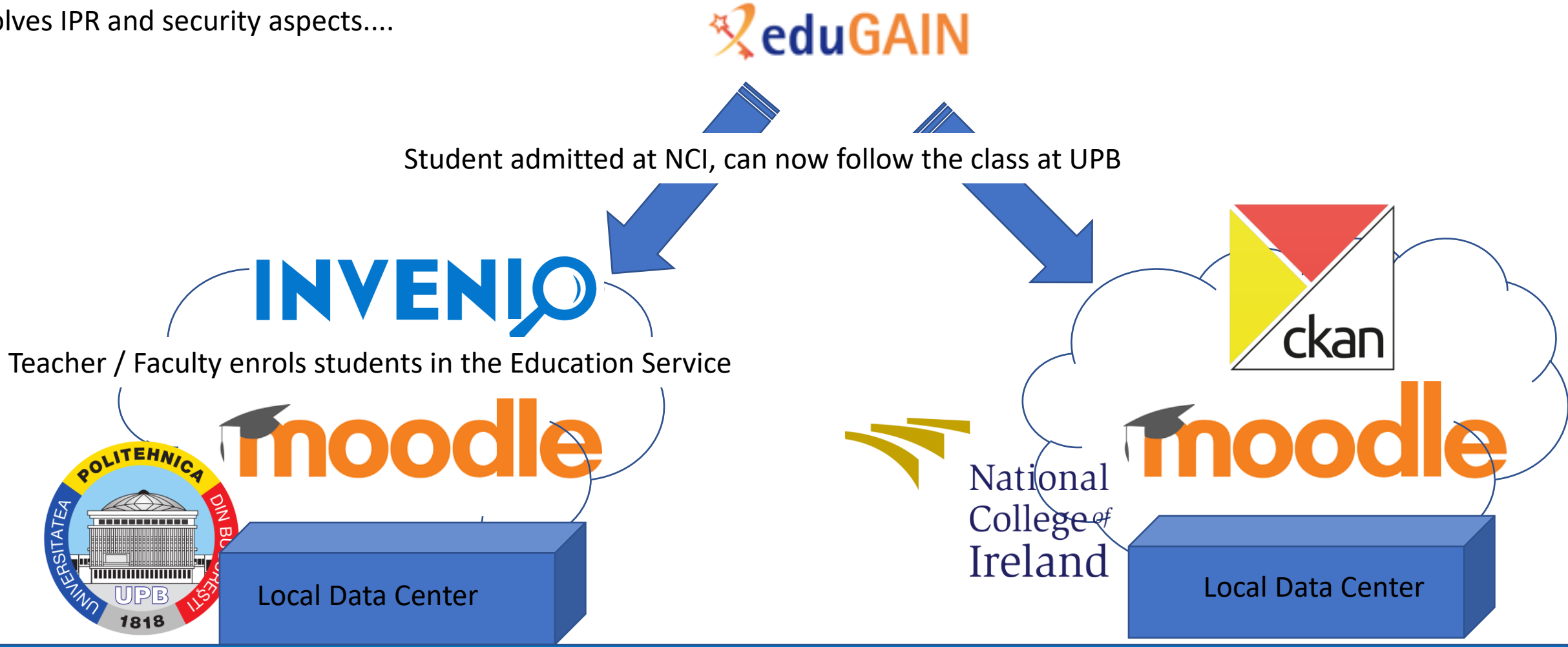
Easy to have

Can work for a comon curricula like the one for Reproductibility Science

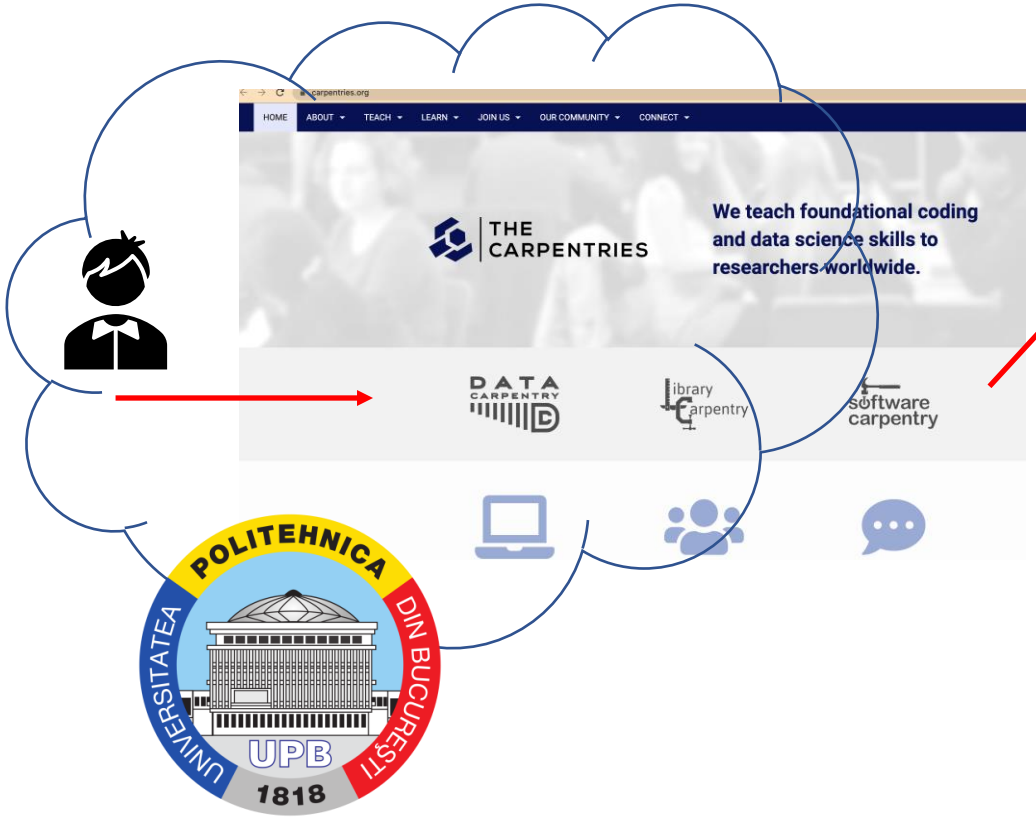
Not working when already existing materials need to be moved somewhere else (IPR / GDPR?)

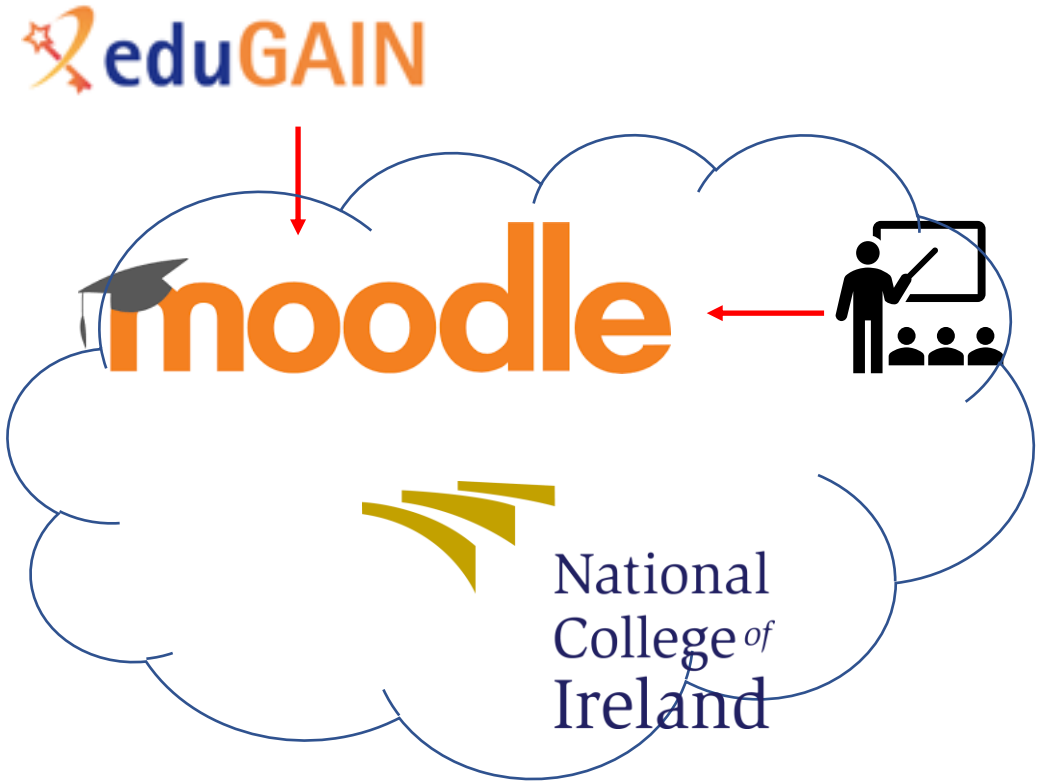
What would have been nice to have...

It solves IPR and security aspects....



And a catalogue of classes / modules





ELLISA Catalogue of Classes
- joint OS curricula –

- 1. Introductory to OS
- 2. IPR and Ethics
- 3. Open Data / RDM
- 4. Research Methodologies
- 5. OS Engineering
- 6. Advanced OS Topics

What is Open Science
Open Access and the Funders' strategy
Research Data Management e FAIR Data
How to write a Data Management Plan
How to use the institutional Repository IRIS
Infomation webinars on Open Science dedicated to post-doc fellows and researchers.

Human Rights and Global Politics

Research Software & Data Formats in the Humanities & Social Sciences: https://www.studon.fau.de/studon/goto.php?target=lm_2993840
Data Management Plans & RDMO: https://www.studon.fau.de/studon/goto.php?target=lm_2993053 Search & reuse research data: https://www.studon.fau.de/studon/goto.php?target=lm_2994018

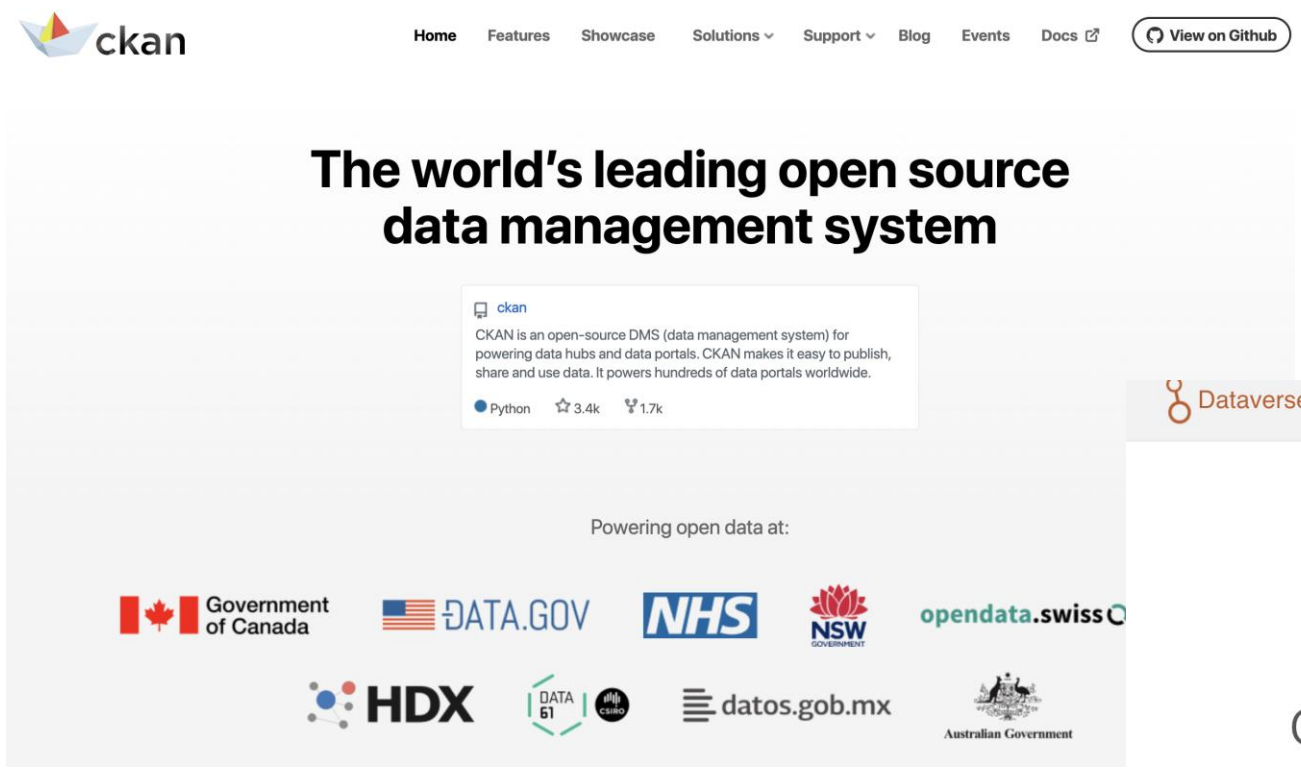
FAU Friedrich-Alexander-Universität Erlangen-Nürnberg

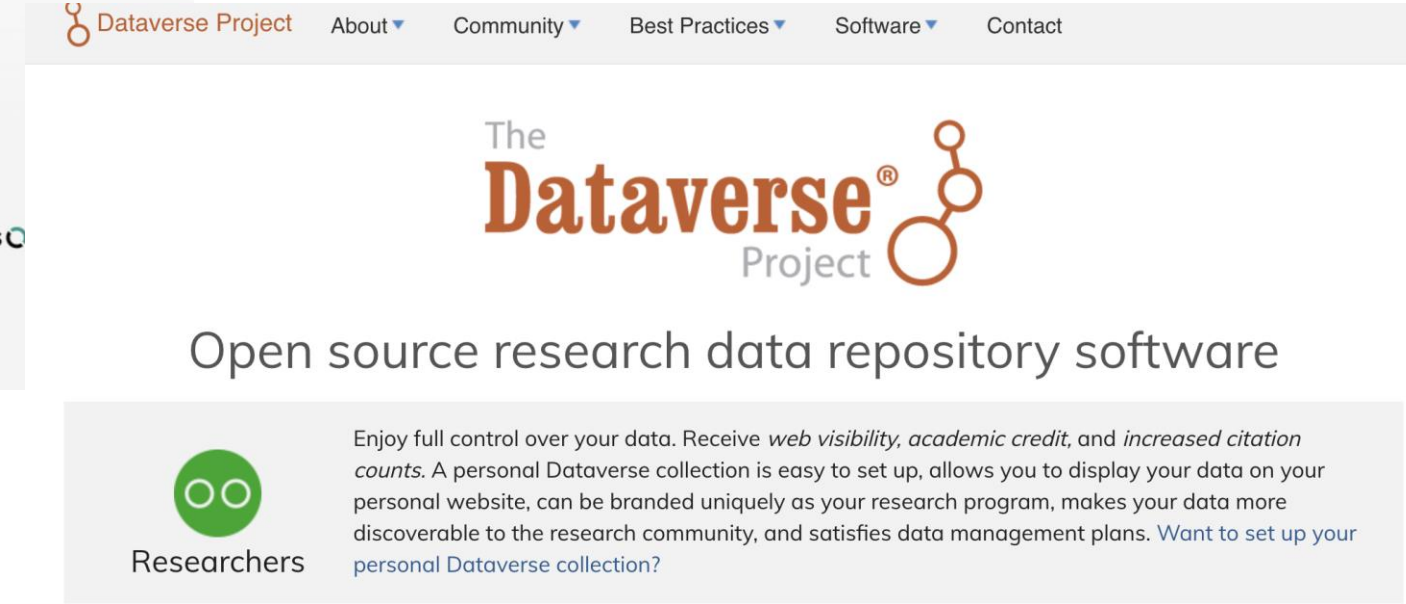
…n Science by ITU Library
…vant to the PhD. Seminars.

Big Data
OS Engineering

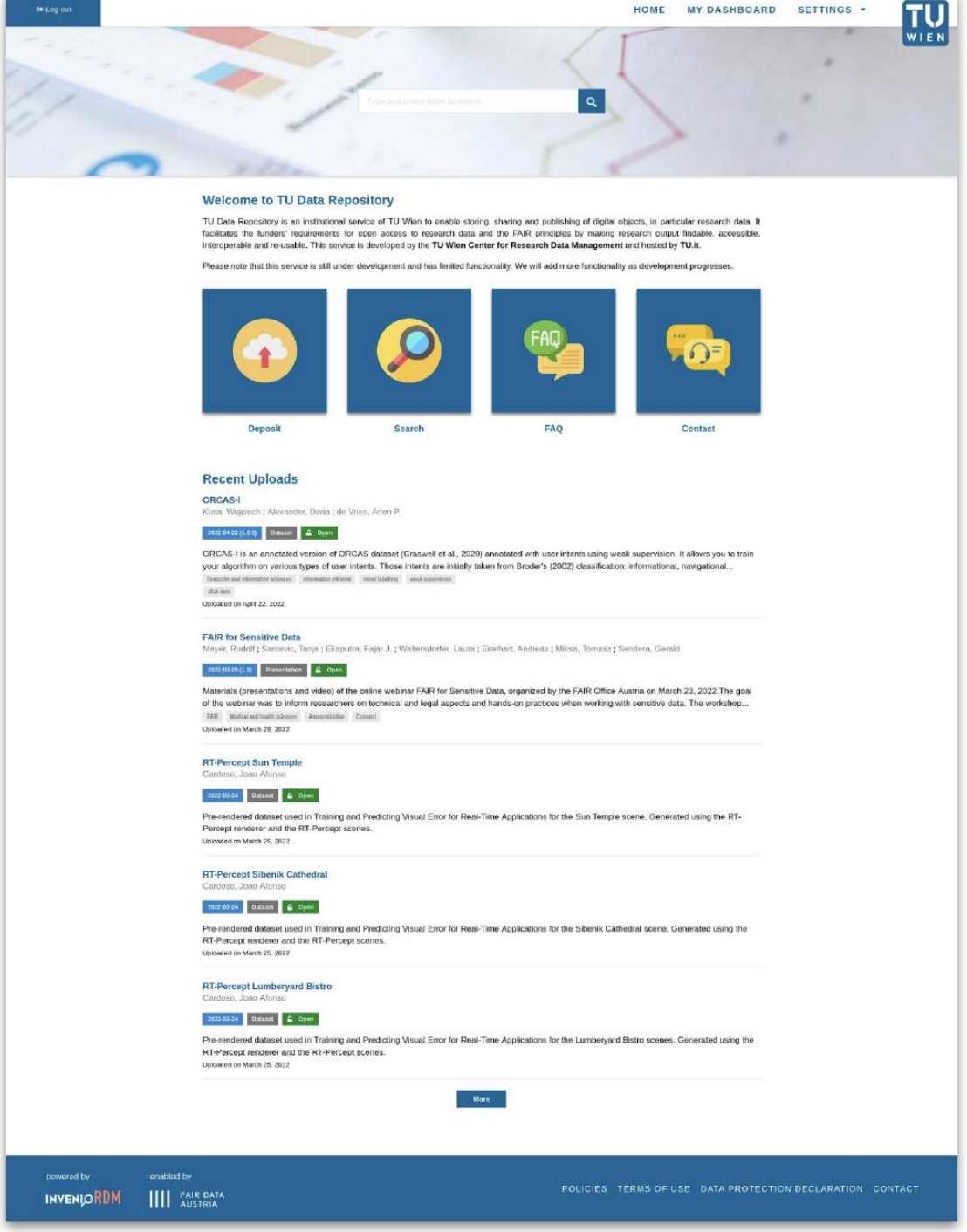
We could link our actions even further...

Institutional repositories



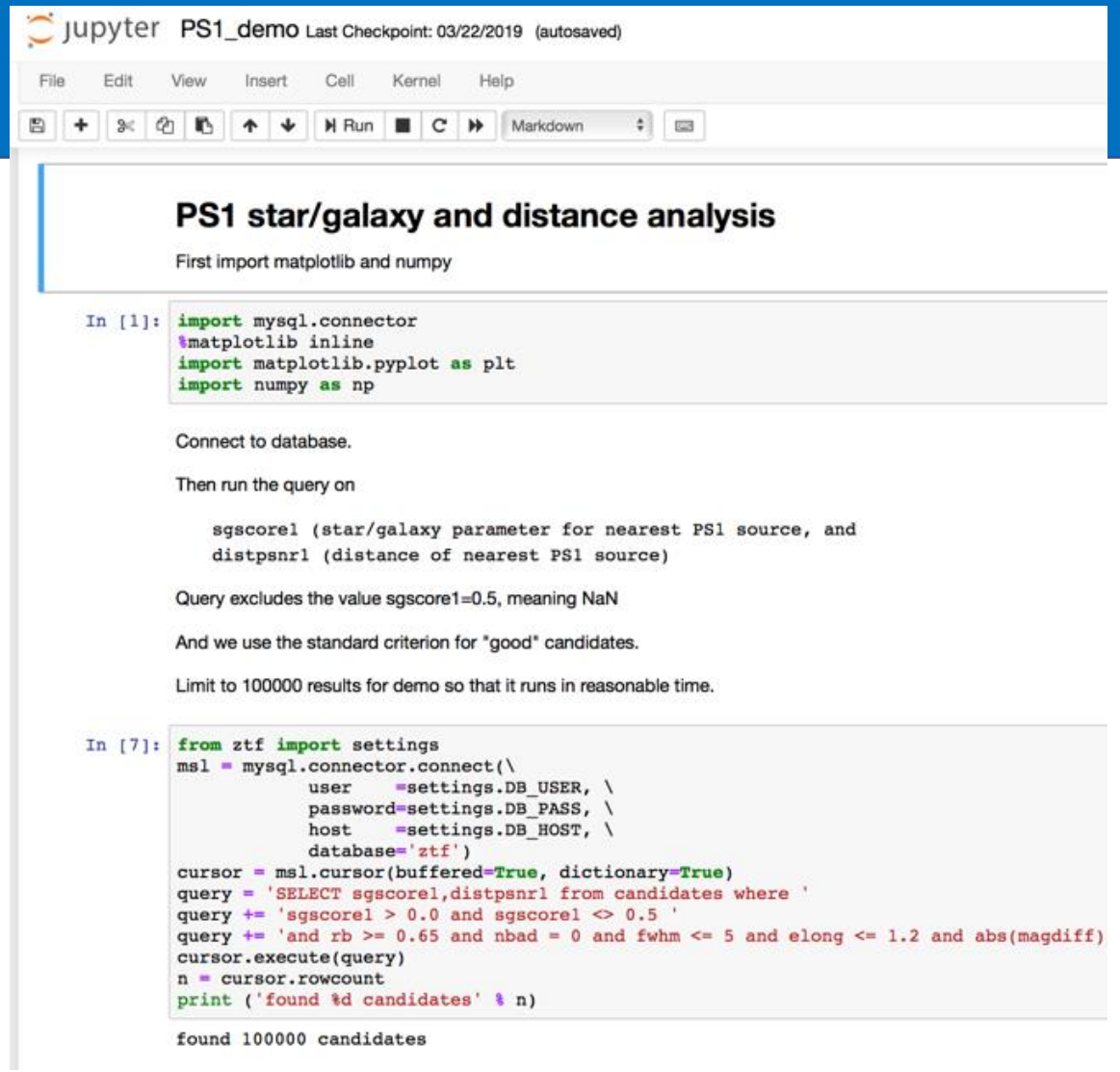


What about Invenio?



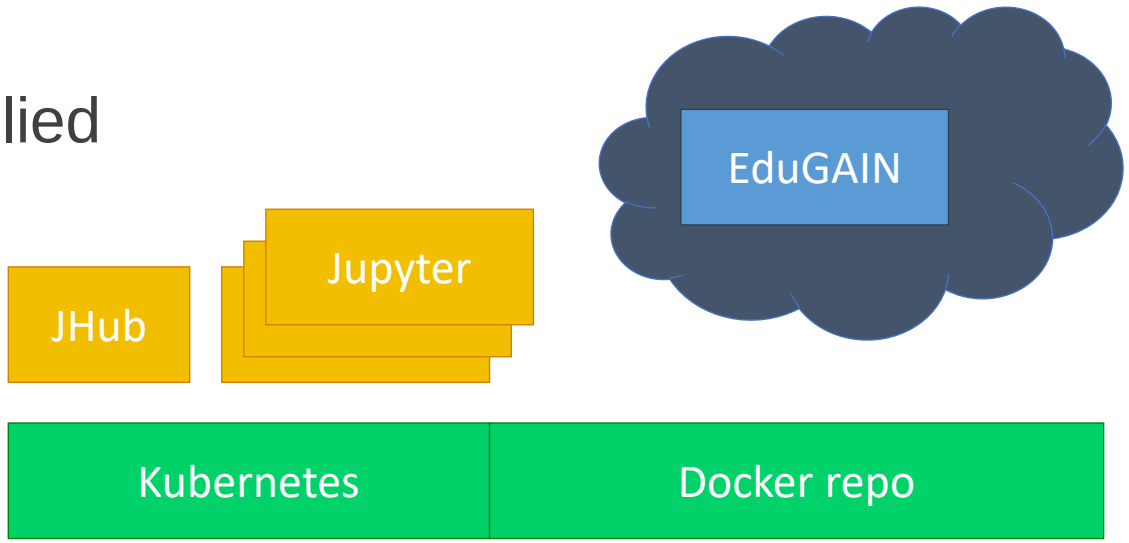
For the Labs – reproducible Science

- Jupyter Notebooks and JupyterHub give users access to computational environments and resources without the hassle of installation and maintenance tasks.
  - Jupyter Notebooks are web-based interactive computational environments that are pre-provisioned with course material.
  - JupyterHub gives users access to computational environments and resources without burdening the users with installation and maintenance tasks.
- Students connect — each to their own copy of the environment — and develop content as directed, often writing short segments of code.

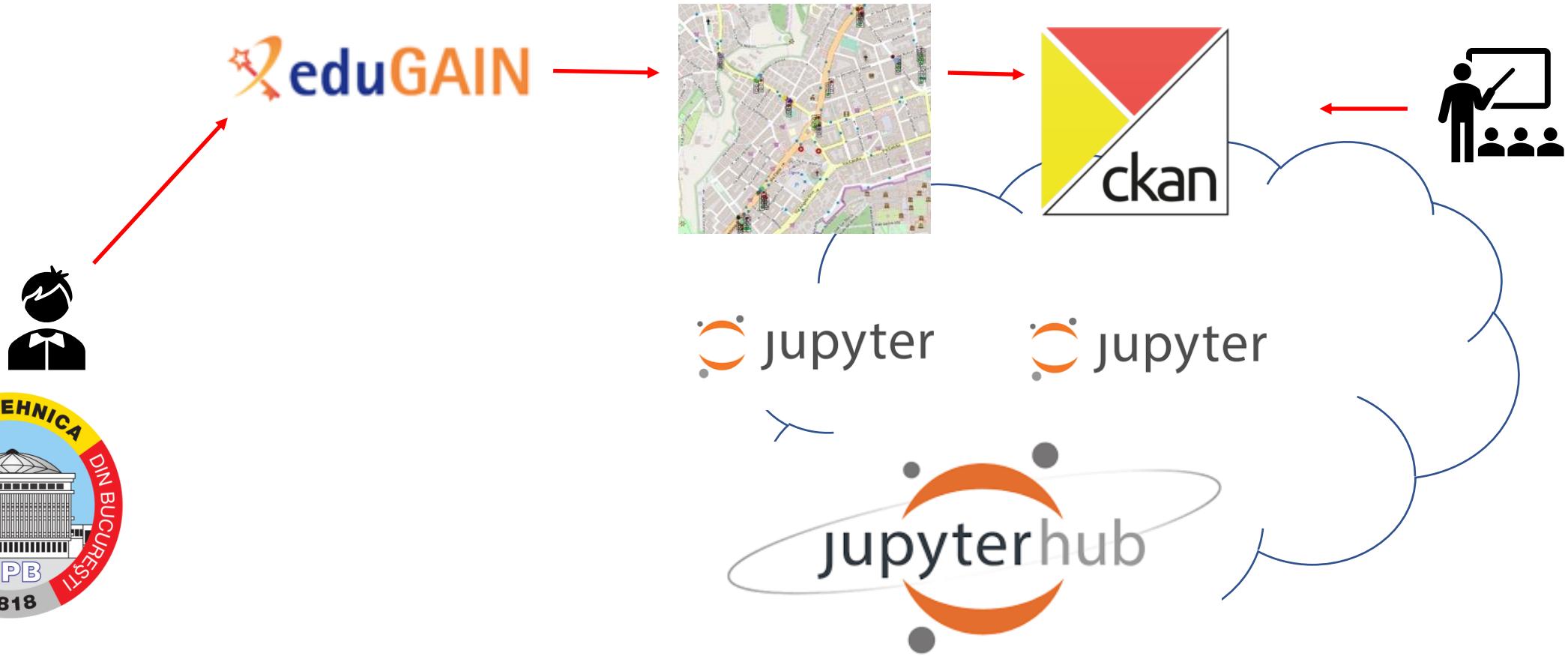


Jupyter Notebooks in the Classroom

- Strong potential as a teaching tool for both specific course content and programming languages
  - Flexibility for instructors and students
  - Accessible coding environment
- Highly relevant for investigations in applied academic research



And the process continues...



March events @UPB

We started with week-school

Centro Saperi&Co	*Centro Saperi&Co*	*Centro Saperi&Co*	*Centro Saperi&Co*	*Centro Saperi&Co*
UPB/Dana Violeta GHEORGHE: Open Concepts and Principles, Open Access to Published Research Results UPB/Cătălin NEGRU: Open Research Data and Materials (Part I)	TUWIEN /Martin Weise: Repositories for Research Data and Trusted Research Environments	NCI/John BOHAN: Data Governance and Data Management	ICI/Ciprian DOBRE: Research project: Reproducible science using Jupyter Notebooks (intro on tools)	La Sapienza/ Giulia ANTINUCCI: Introduction to the topic Andrea RICCIO: Open Innovation for HEIs - How universities can implement and benefit from OI
Coffee Break	**Coffee Break**	**Coffee Break**	**Coffee Break**	
UPB/Cătălin NEGRU: Open Research Software and Open (Part II) UPB/Radu CIOBANU: Reproducible Research and Data Analysis, Open Licensing and File	TUWIEN /Samah Jaber: FAIR Data Management	NCI/Vanessa AYALA-RIVERA: Privacy and Data Protection	UPB/Radu CIOBANU and Silviu PANTELIMON: Reproducible science using Jupyter Hub and Binder	La Sapienza / Paola CIACCIA: The exploitation of research results: from patent filing to academic entrepreneurial culture La Sapienza / Cristina Di GIOVANCARLO: POCs: an academic model of IPR Investment
Lunch Break	**Lunch Break**	**Lunch Break**	**Lunch Break**	Coffee Break
ICI/Ciprian DOBRE: Collaborative Platforms	TUWIEN /Maximilian MOSER & Sotirios TSEPELAKIS: InvenioRDM	NCI/ John BOHAN: Ethical Issues Pertaining to Data	ICI/Ciprian DOBRE: Research project: Reproducible science using Jupyter Notebooks (statistical/data analytics)	Andrea RICCIO: Case study: The RRIstart project - a novel model for responsible startups and impact
Coffee Break	**Coffee Break**	**Coffee Break**	**Coffee Break**	
UPB: Practice and exercise	TUWIEN /Maximilian MOSER & Sotirios TSEPELAKIS: Software Licenses TUWIEN / Tomasz Miksa (online): Data Management Plans (DMPs)	NCI/Michael BRADFORD: Fairness, Accountability, and Transparency of Algorithmic Systems	All partners and participants: Practice and exercise on tools for Reproducible science	Andrea RICCIO: Tools for Open Innovation - Canvas, Theory of Change, PEST model, crowdfunding

Proposal for the organisation of March events

27-31 March

- Monday: TrainRDM PhD Training (UPB) / Meeting Invenio (workshop with TU Wien)
- Tuesday: TrainRDM PhD Training (TU Wien) / SMARDY meeting
- Wednesday: TrainRDM PhD Training (Sappienza Italy) / TrainRDM TPM
- Thursday: TrainRDM PhD Training (NCI) / EELISA InnoCore WP3 workshop
- Friday: EELISA Open Science Forum / TrainRDM Multiplier Event (coupled events)

TrainRDM Training Week for PhD

	Monday 27.03.2023	Tuesday, 28.03.2023	Wednesday, 29.03.2023	Thursday, 30.03.2023
Venue	*UPB, Spl. Independentei 313, PRECIS Building, PR606*	*UPB, Spl. Independentei 313, PRECIS Building, PR606*	*UPB, Spl. Independentei 313, PRECIS Building, PR606*	*UPB, Spl. Independentei 313, PRECIS Building, PR606*
09:00 – 10:30	UPB/Dana Violeta GHEORGHE: Open Concepts and Principles, Open Access to Published Research Results	TU WIEN/Samah JABER: The FAIR Principles	La Sapienza/ Giulia ANTINUCCI: Introduction to the topic	NCI/John BOHAN: Data Governance and Data Management
	UPB/Cătălin NEGRU: Open Research Data and Materials (Part I)		Andrea RICCIO: Open Innovation for HEIs - How universities can implement and benefit from OI	
10:30 – 11:00	**Coffee Break**	**Coffee Break**	**Coffee Break**	**Coffee Break**
11:00 – 12:30	UPB/Cătălin NEGRU: Open Research Software and Open (Part II)	TU WIEN/Christiane STORK: Introduction into Data Management Planning (Part I)	La Sapienza / Paola CIACCIA: The exploitation of research results: from patent filing to academic entrepreneurial culture	NCI/Vanessa AYALA-RIVERA: Privacy and Data Protection
	UPB/Radu CIOBANU: Reproducible Research and Data Analysis, Open Licensing and File	TU WIEN/Elise HARDER: The Role of Persistent Identifiers in the Research Context	La Sapienza / Cristina Di GIOVANCARLO: POCs: an academic model of IPR Investment	NCI/Presenter tbd: Ethical Issues Pertaining to Data
12:30 – 13:30	**Lunch Break**	**Lunch Break**	**Lunch Break**	**Lunch Break**
13:30 – 14:30	ICI&UPB/Ciprian DOBRE: Collaborative Platforms	TU WIEN/Christiane STORK: Introduction into Data Management Planning (Part II including practical exercise)	Andrea RICCIO: Tools for Open Innovation - Canvas, Theory of Change, PEST model, crowdfunding	NCI/Michael BRADFORD: Fairness, Accountability, and Transparency of Algorithmic Systems
14:30 – 15:00	**Coffee Break**	**Coffee Break**	**Coffee Break**	**Coffee Break**
15:00 – 17:00	UPB: Practice and exercise	ICI/Ciprian DOBRE: Research project: Reproducible science using Jupyter Notebooks (intro on tools)	UPB/Radu CIOBANU and Silviu PANTELIMON: Reproducible science using Jupyter Hub and Binder	ICI/Ciprian DOBRE: Research project: Reproducible science using Jupyter Notebooks (statistical/data analytics)

Master @NCI

Going forward... First steps... Cluster Master programmes

Figure 4.1: 90-credit MSc in Research Data Management: Proposed Structure

Table 3.1: Matrix of Competencies per Partner

Competency	UPB	TUW	NCI	DTSL	SAPIENZA	ICI
Data Management Plan		✓				✓
Research Ethics		✓	✓		✓	
Data Stewardship		✓				✓
Data Protection		✓	✓			
IPR		✓		✓	✓	
FAIR	✓	✓	✓		✓	
Data Visualisation		✓				
Data Analytics	✓		✓			
Federated Content Management Systems	✓		✓			✓
GDPR	✓		✓			
Open Innovation				✓	✓	
Open Science	✓					✓
Open Source				✓		✓

Ex., for Data Compliance & Ethics

Topic	Lecture Topic	Lecture Detail
1	Data Governance and Data Management I	Data governance and data management; Data management principles; Data lifecycle; Data quality; Data provenance; Data integrity and security
2	Data Governance and Data Management II	Data governance frameworks; Data governance within the DAMA Wheel; Policies, principles, rules, procedures, and standards; Data governance operating models and tools
3	Data Governance and Data Management III	Roles and responsibilities; Maturity levels; Ladley's 8-phase implementation process for data governance; Data risk identification and management
4	Privacy and Data Protection I	Brief history of human rights; Privacy and confidentiality; Sources of rights: Universal declaration of human rights, European Convention on Human Rights, EU Charter of Fundamental Rights; Types of EU legislation
5	Privacy and Data Protection II	National law; General Data Protection Regulation Scope; Personal data; Legitimate bases for data processing; Data protection principles; Data subject rights; Privacy by design and by default
6	Privacy and Data Protection III	Data protection impact assessment; Issues of consent; Supervision and enforcement; Data protection in practice including international transfers, surveillance, cloud computing, and auditing
7	Ethical Issues Pertaining to Data I	Personal, professional, societal, and legal morality; Branches of normative ethics (deontology, utilitarism, virtue theory, social justice, etc.); IT Ethics including spam, censorship and free speech, anonymity, cyberbullying, copyright, etc.
8	Ethical Issues Pertaining to Data II	Frameworks for ethical design and decision making (e.g., Ethical Impact Assessment, The data ethics canvas); Ethics in Research: considerations Before, During, and After; Codes of ethics and professional conduct (e.g., ACM)
9	Ethical Issues Pertaining to Data III	Ethic concerns in health technology, Pervasive monitoring and tracking; Image, video and sound capture; Perpetuity of data storage
10	Fairness, Accountability, and Transparency of Algorithmic Systems I	The meaning of fairness with respect to algorithmic systems; Unconscious Bias and techniques to address/reduce it; Perceptions of algorithmic bias and unfairness; Interventions to mitigate biases in systems, or discourage biased behaviour from users; Fairness-aware machine learning and data mining; Methods, tools, and standards for ensuring that algorithms comply with fairness policies (e.g., IEEE P7003 TM).
11	Fairness, Accountability, and Transparency of Algorithmic Systems II	The meaning of accountability with respect to algorithmic systems; Processes and strategies for developing accountable systems; Principles and frameworks for accountable algorithms.
12	Fairness, Accountability, and Transparency of Algorithmic Systems III	The meaning of transparency with respect to algorithmic systems; Trade-offs between privacy and transparency; Tools and methodologies for conducting algorithm audits (e.g., Algorithmic Impact Assessments).

For Open Science

ID	Course Title	Topic
Course I (5 ECTS)	Open Science	Open Concepts and Principles
		Open Access to Published Research Results
		Open Science Policies
Course II (5 ECTS)	Open Data	Open Research Data and Materials
		Open Research Software and Open Source
		Open Licensing and File Formats
Course III (5 ECTS)	OS Engineering	Reproducible Research and Data Analysis
		Collaborative Platforms
		Open Advocacy
Course IV (5 ECTS)	OS Advanced topics	Open Peer Review Metrics and Evaluation
		Citizen Science
		Open Educational Resources

For RDM

ID	Course Title	Topic
Course I (5 ECTS)	FAIR Data Management	Introduction into RDM
		Introduction into FAIR
		Data management plans (DMP)
Course II (4 ECTS)	Processing Data	Documentation
		File formats
		Metadata
		Data standardisation and ontologies
Course III (4 ECTS)	Making Data Available	Persistent identifiers (PIDs)
		Licences, copyright and intellectual property rights (IPR) issues
		Repositories
Course IV (2 ECTS)	RDM Advanced Topics	Dealing with confidential, personal, sensitive & private data
		FAIR software/citable code

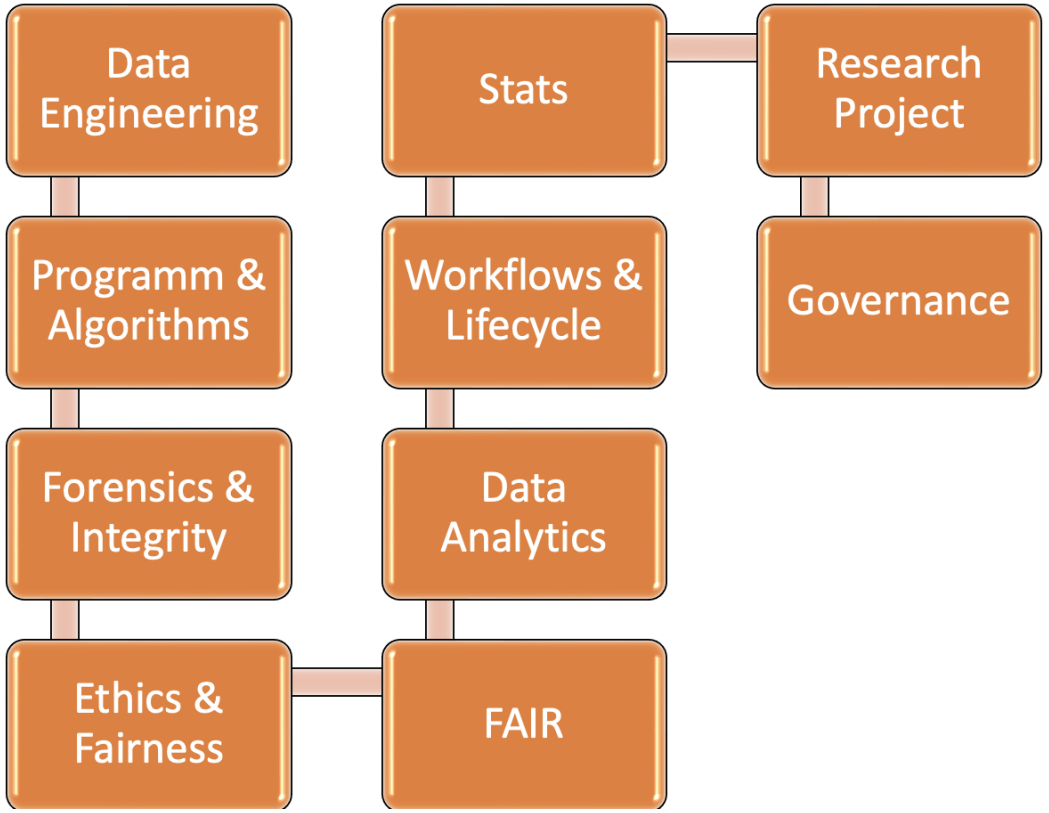
For Data Compliance & Ethics

Topic	Lecture Topic	Lecture Detail
1	Data Governance and Data Management I	Data governance and data management; Data management principles; Data lifecycle; Data quality; Data provenance; Data integrity and security
2	Data Governance and Data Management II	Data governance frameworks; Data governance within the DAMA Wheel; Policies, principles, rules, procedures, and standards; Data governance operating models and tools
3	Data Governance and Data Management III	Roles and responsibilities; Maturity levels; Ladley's 8-phase implementation process for data governance; Data risk identification and management
4	Privacy and Data Protection I	Brief history of human rights; Privacy and confidentiality; Sources of rights: Universal declaration of human rights, European Convention on Human Rights, EU Charter of Fundamental Rights; Types of EU legislation
5	Privacy and Data Protection II	National law; General Data Protection Regulation Scope; Personal data; Legitimate bases for data processing; Data protection principles; Data subject rights; Privacy by design and by default
6	Privacy and Data Protection III	Data protection impact assessment; Issues of consent; Supervision and enforcement; Data protection in practice including international transfers, surveillance, cloud computing, and auditing
7	Ethical Issues Pertaining to Data I	Personal, professional, societal, and legal morality; Branches of normative ethics (deontology, utilitarism, virtue theory, social justice, etc.); IT Ethics including spam, censorship and free speech, anonymity, cyberbullying, copyright, etc.
8	Ethical Issues Pertaining to Data II	Frameworks for ethical design and decision making (e.g., Ethical Impact Assessment, The data ethics canvas); Ethics in Research: considerations Before, During, and After; Codes of ethics and professional conduct (e.g., ACM)
9	Ethical Issues Pertaining to Data III	Ethic concerns in health technology, Pervasive monitoring and tracking; Image, video and sound capture; Perpetuity of data storage
10	Fairness, Accountability, and Transparency of Algorithmic Systems I	The meaning of fairness with respect to algorithmic systems; Unconscious Bias and techniques to address/reduce it; Perceptions of algorithmic bias and unfairness; Interventions to mitigate biases in systems, or discourage biased behaviour from users; Fairness-aware machine learning and data mining; Methods, tools, and standards for ensuring that algorithms comply with fairness policies (e.g., IEEE P7003 TM).
11	Fairness, Accountability, and Transparency of Algorithmic Systems II	The meaning of accountability with respect to algorithmic systems; Processes and strategies for developing accountable systems; Principles and frameworks for accountable algorithms.
12	Fairness, Accountability, and Transparency of Algorithmic Systems III	The meaning of transparency with respect to algorithmic systems; Trade-offs between privacy and transparency; Tools and methodologies for conducting algorithm audits (e.g., Algorithmic Impact Assessments).

For Repr. Workflows & Data Methodologies

ID	Course Title	Topic
Course I (5 ECTS)	Research Data Methodologies	Planning and Designing an OS Research Study
		Open Data Collection, Assessment Methods, and Measurement Strategies
		OS Research Designs and Approaches
Course II (5 ECTS)	Data Collection	Finding the right Open Data
		Sampling Design
		Instruments to share Data in Research Methodologies
Course III (5 ECTS)	Data Analysis	Measurement and Scaling Techniques
		Preparation, Analysis and Processing of Data
		Data Interpretation and Hypothesis Testing
Course IV (5 ECTS)	Data Validation	Multivariate Analysis Techniques based on Data Provenance
		Ethical Considerations in OS Research
		OA Disseminating Research Results and Distilling Principles of Research Design and Methodology

MSc Open Data Management



THANK YOU!

Follow us