IRCAI

Scientific excellence, global public dialogue and technology for sustainability, inclusion and equality.

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Rare Diseases Situational Awareness

Global AI Digital Twins

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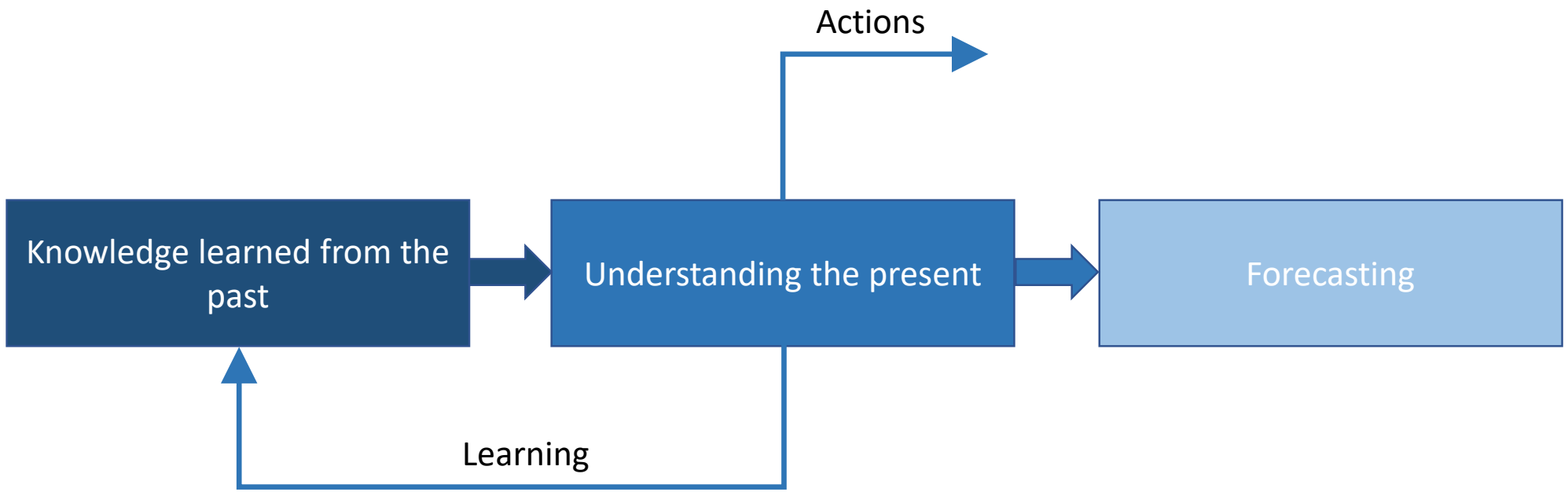
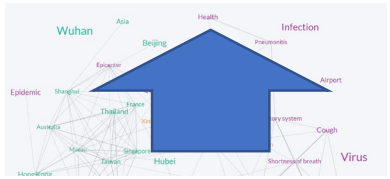
Challenges

- A complex domain with lots of Unknown Unknowns
- Lots of small communities – distributed (unconnected) resources, distributed funding
- A global challenge – various datasets, multimodal, multilingual, scarcity of data
- Wide range of stakeholders – but very devoted
- Latency – long reaction times

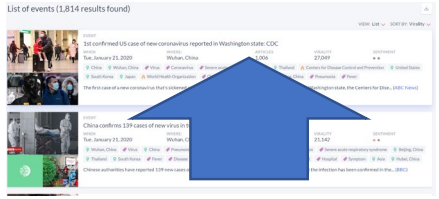
How can these be connected/integrated and streamlined?

Understanding what is happening by knowing the past we can predict the consequences of events

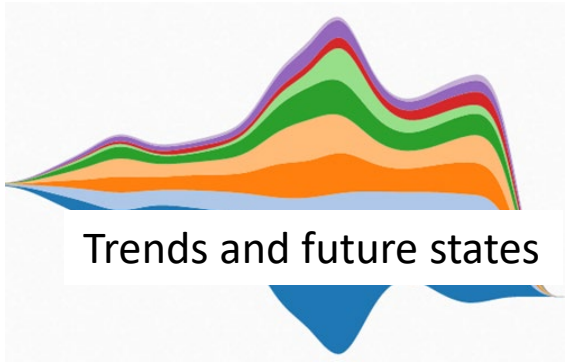




Formalised knowledge and models



Data and information in realtime



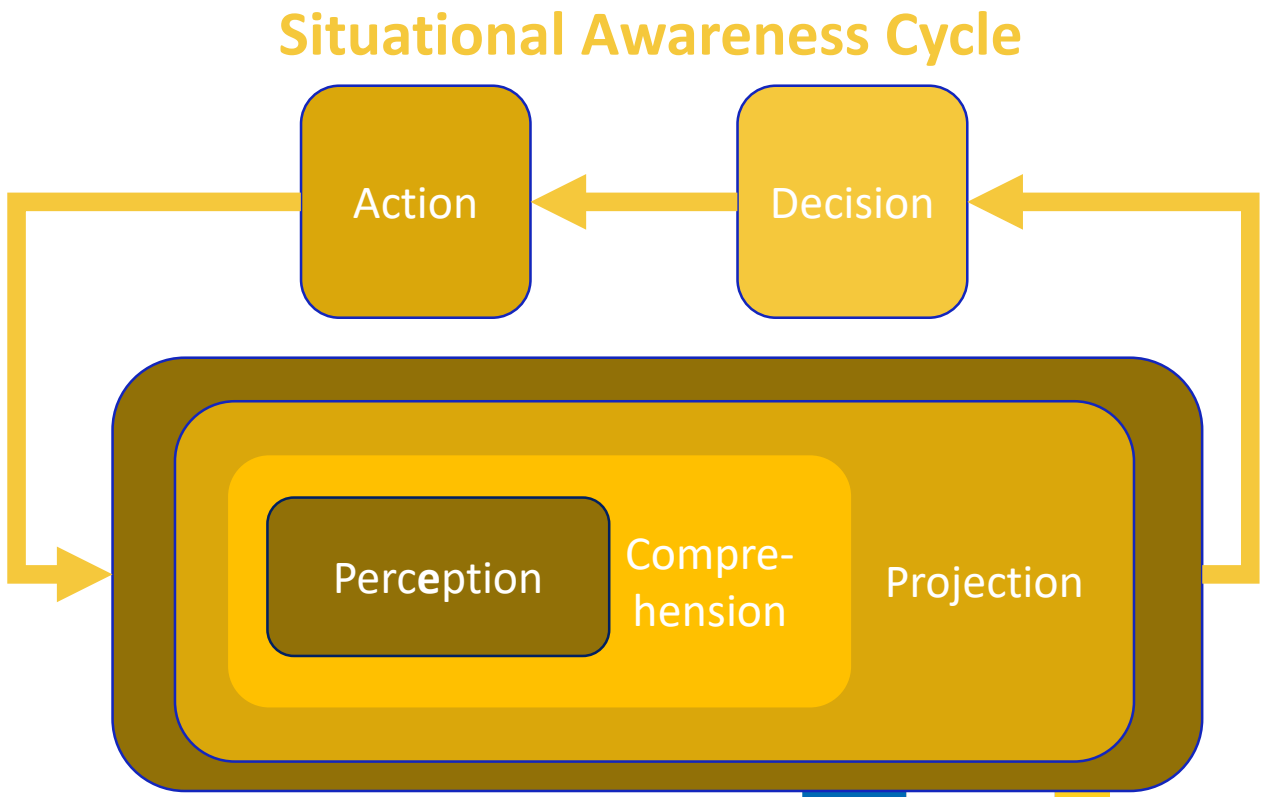
Trends and future states

Automating ‘ *Situational Awareness* ’ as a prerequisite for informed decision making

Situational awareness, as typically defined includes:

perception of environmental elements and events (in time and space),
comprehension of their meaning, and
projection of their future status

- In the societal context the ‘ ***perception*** ’ is mostly automated, while other activities are performed manually
- …the challenge is to automate ‘***comprehension***’, and ‘***projection***’ with the modern AI technology



In an ideal situation, a system should be able to respond to the following 7W questions

7W:	What?	When?	Where?	Who?	Whose?	Why?	What-If?
History	Content/Issue	Time period	Location/Geography	Entities (People, Org.)	Origin/Provenance	Causal explanation	Simulated future
Present							
Future							

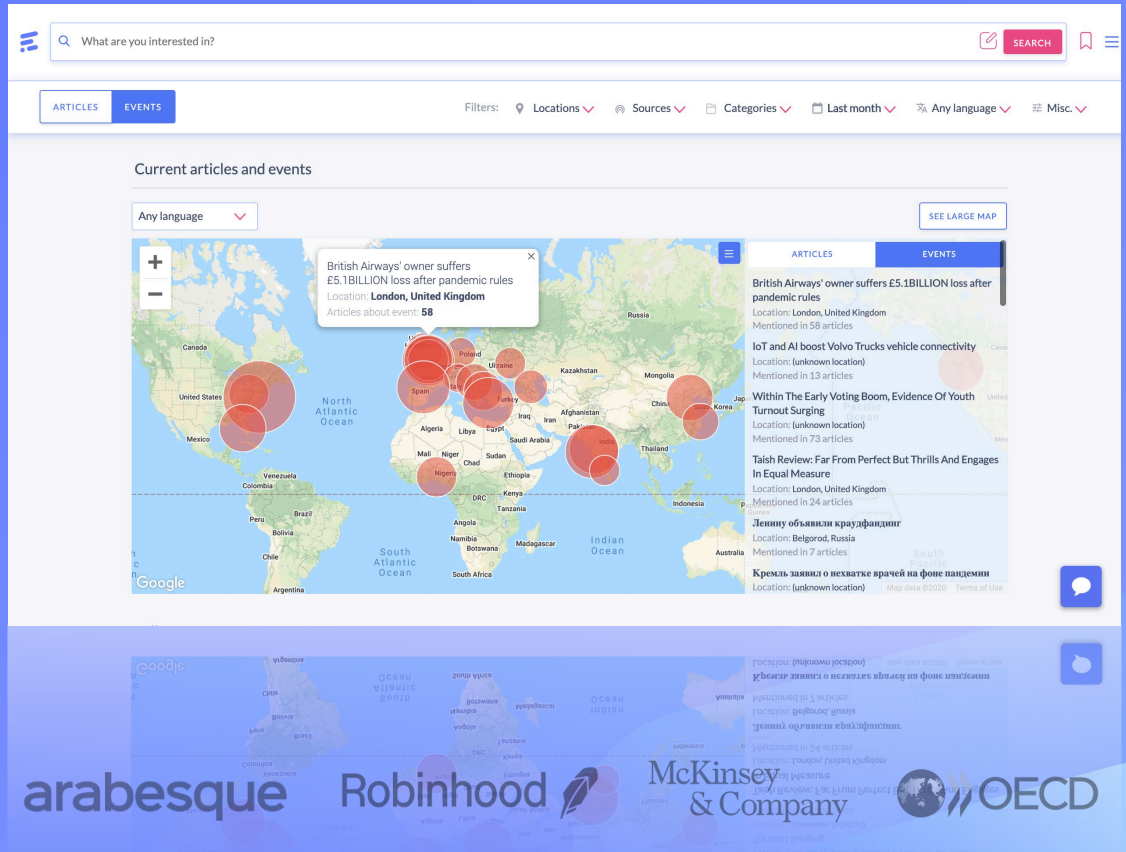
While the first 5 Ws are manageable, the challenge for AI is to deal with ‘Why’ and ‘What - If’

…extending the usual ‘Five Ws’ questions

https://en.wikipedia.org/wiki/Five_Ws

Real-time (Global Media Digital Twin)

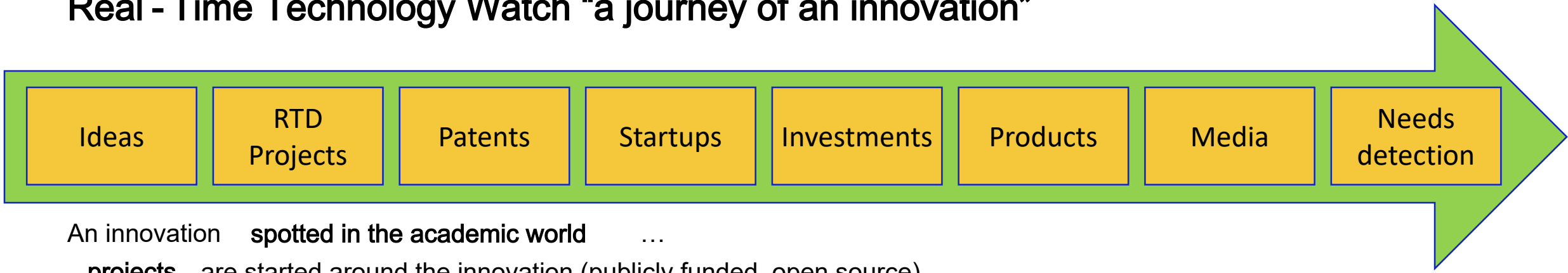
Event Registry is online encyclopedia of global events. Combining Wikipedia content with real-time news insights in one fully integrated solution. With the latest AI onboard we have radically simplified the identification of macro and micro-events in the global media. Since 2017, our company has been at the forefront of events analytics, making its mark in a different approach to news analysis and help companies like Bloomberg, IBM, Stratfor, Pwc, and OECD get to build better data products.



Bloomberg IBM AIRBUS mastercard arabesque Robinhood McKinsey & Company OECD

Predictive - Global Digital Twin (OECD.AI)

Real - Time Technology Watch “a journey of an innovation”



An innovation **spotted in the academic world** …

…**projects** are started around the innovation (publicly funded, open source)

…researchers & developers **informally discuss** the innovation

…the innovation gets **patented**

…**companies** are established around the innovation

…companies get **investments** , possibly in several rounds

…investments have influence on **job market** (supply and demand side)

…**market** reacts on the quality of innovation

…**education** introduces new courses

…**search engines** show perception & interest from expert and broad audiences

…**media** starts publishing about the innovation and companies

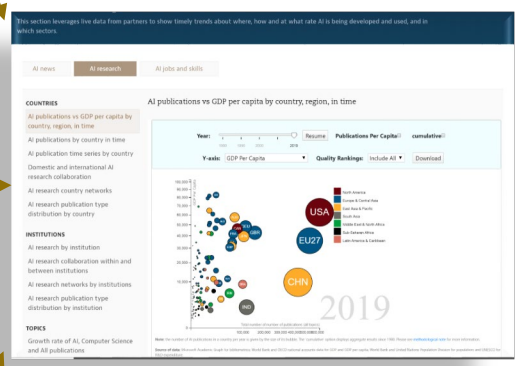
…**incidents** happen to show weaknesses to be treated

…**policies** are formulated on international and national level

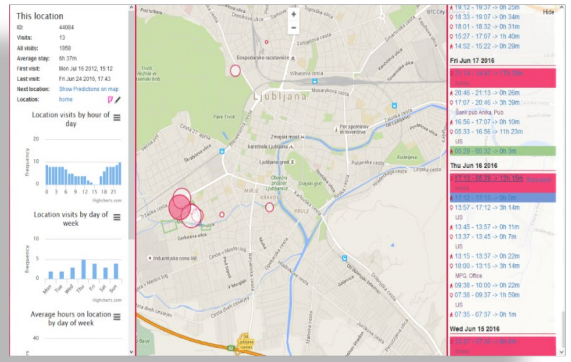
Situational Awareness - Country Digital Twin

- *Health*
- *Pharmacies*
- *Telecommunications*
- *Transactions in companies*
- *Transactions in stores*
- *Transport in a country*
- *Supply chains*
- *Energy activity*
- *Media*
- *Informal information collection*

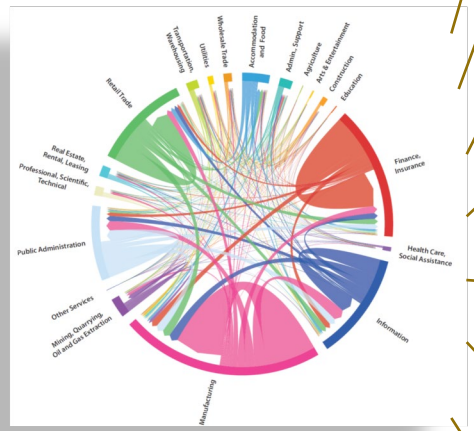
Observatory



Simulator



Adviser



- *Actions*
- *Plans*
- *Strategies*
- *Emerging models*
- *Rules*
- *Policies*

Data, information collection → Monitoring and analytics → Predictions and simulations → Proposing and evaluating actions

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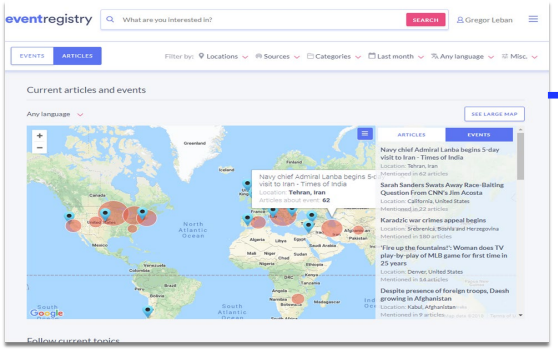
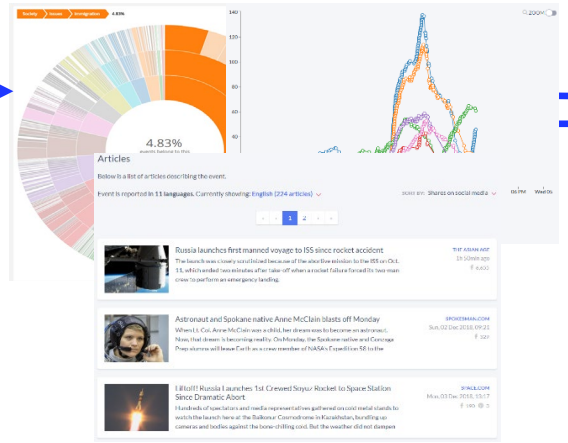
Project: Global Ground Truth

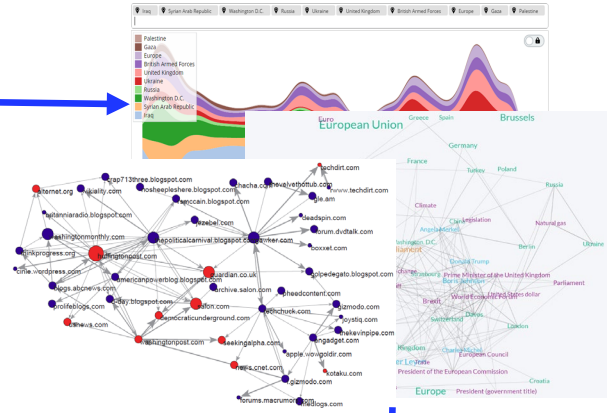
Information aggregation and miss-information **detection**



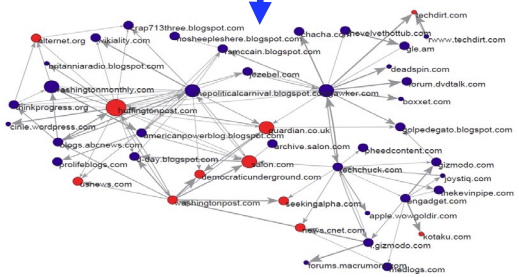
Analysis and miss-information **confirmation**



Complex scenario detection and **understanding**



Human supported analysis and fact checking



Ground Truth Presentation

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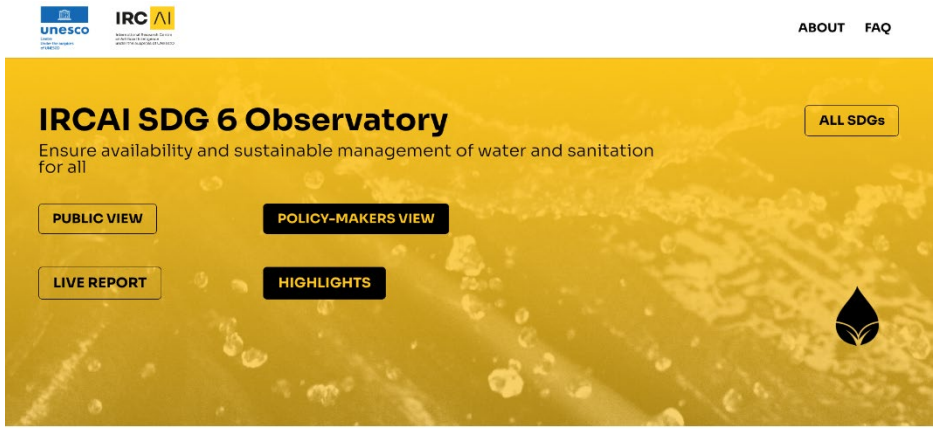
SDG Observatories

AI - powered data - driven platform for governments to identify and react to SDG challenges

With special focus on **SDG6** , we are building on top of the NAIADES project results.



The possibility of cooperation is currently being explored with the Slovenian government.

IRCAI programmes

Policies Innovation
(UNESCO, Council of Europe, OECD, EU, GPAI, National policies, D4D)

Verification programme
(clearing house, mediation verification programme, validation of the ethicality of algorithms and data management)

Research on consequences of AI
(Legal frameworks, Ethics in AI, Added Value Models, Jobs,…)

Financing programme
(Social Impact Bonds, venture capital to finance research and acceleration of start-ups)

Projects addressing global challenges with AI
(Global Ground Truth, Open Education)

Capacity building, Awareness raising
(Journal, AI Olympics, Open education, Events, Formal Educational Programs on AI)

Large Open Analytics Infrastructures
(SDG Observatories, Open Libraries)

Global Network of AI competences
(NAIXUS, IRCAI backbone network)

Scientific Programme Committees:

1. **AI and Assistive Technologies** - PC Chair Catherine Holloway - Professor and Academic Director, Global Disability Innovation Hub at UCL

2. **AI and Education** – PC Chair Colin de la Higuera - UNESCO Chair in teacher training technologies with OER.

3. **AI and Climate Change** - PC Chair Aidan O'Sullivan - Associate Professor in Energy and AI at UCL

4. **AI and Healthcare** - PC Chair Delmiro Fernandez - Reyes - Professor of Biomedical Computing at UCL

5. **AI and Circular Economy** - PC Chair Mitja Jermol - UNESCO Chair on Open Technologies for OER and Open Learning

6. **AI and Ethics** - PC Chair Vanessa Nurock - UNESCO Chair in the Ethics of the Living and the Artificial, professor of Philosophy at University of Paris

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