



midas

Meaningful Integration of Data, Analytics and Services

Grant Agreement No. 727721

<https://www.youtube.com/watch?v=yiVd4wgVA1s>

Paul Carlin



This project is funded by
the European Union

H2020-SC1-2016-CNECT

SC1-PM-18-2016 - Big Data Supporting Public Health Policies



<http://www.midasproject.eu>



@MIDASProjectEU

MIDAS - Strengths

Grant Agreement No. 727721

- Project Funding Review Score: 15/15
- Value: €4.5M
- Duration: 40 months
- Strong consortium
 - Academic Partners
 - Technical Partners
 - Policy Board Partners
- Great opportunities
 - Opportunities for improved policies for health using big data across Europe
 - High impact research
 - High impact output potential



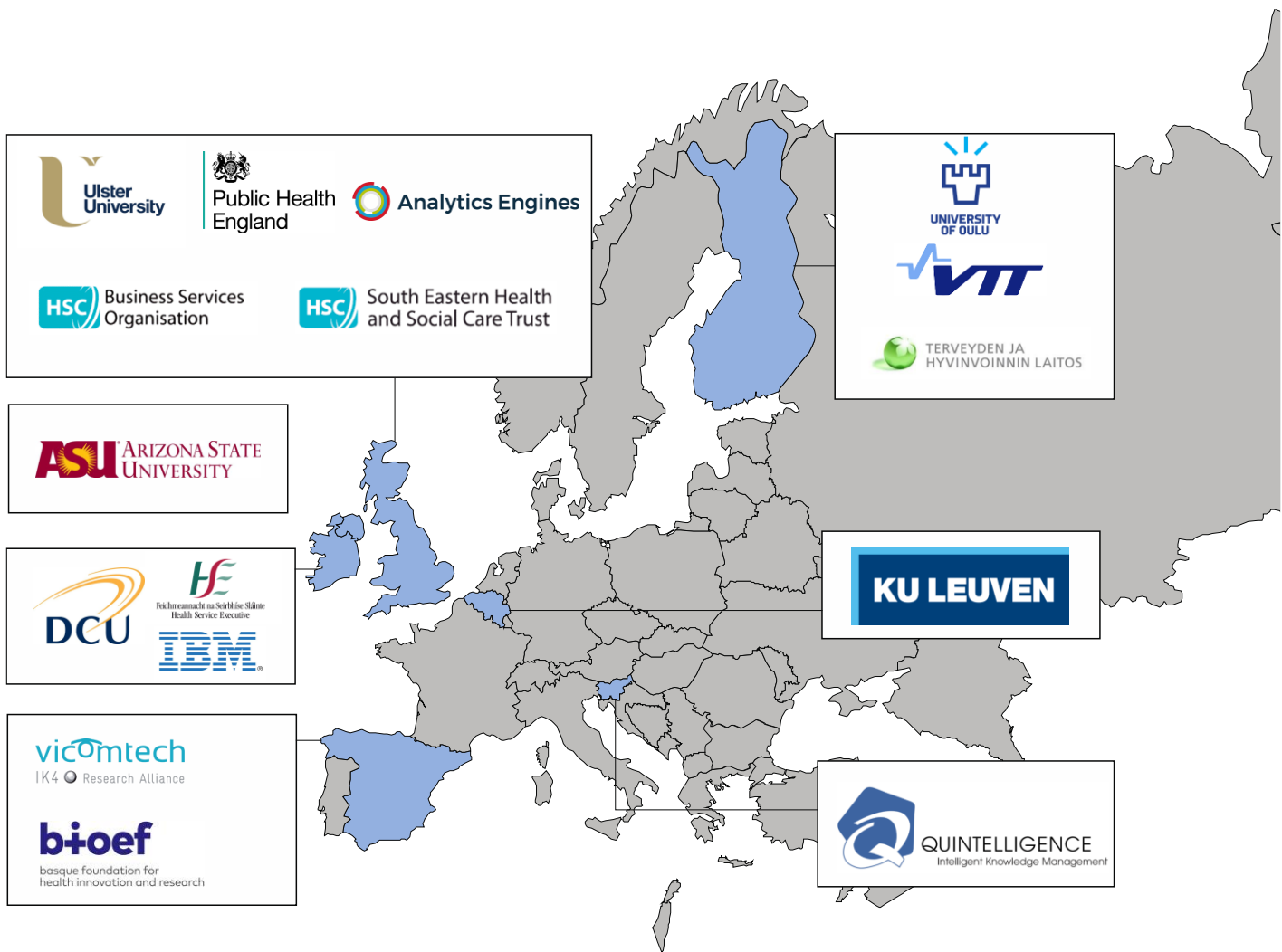
This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU



This project is funded by
the European Union



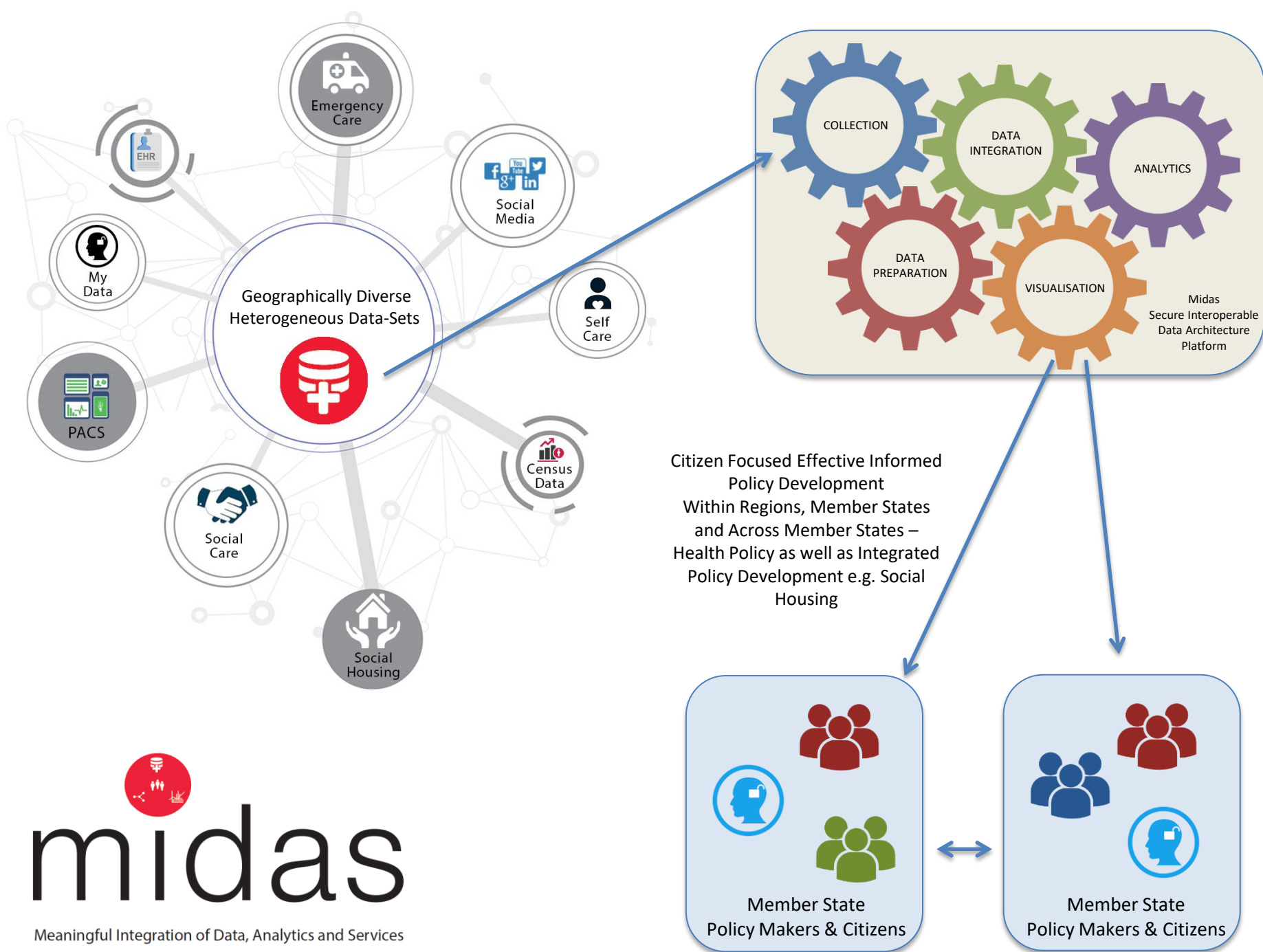
<http://www.midasproject.eu>

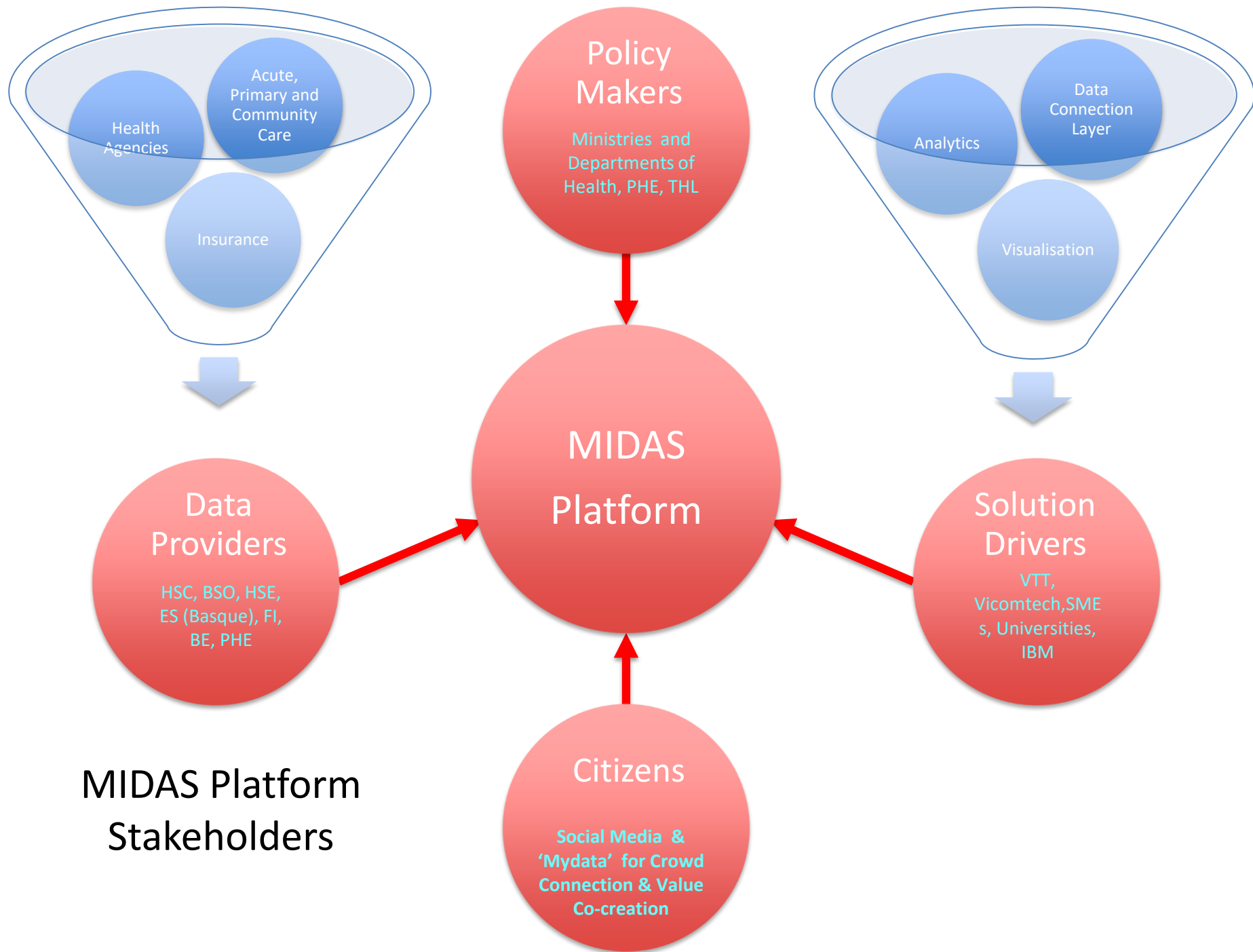


@MIDASProjectEU

Scientific/Technical Team	Policy Board
University of Ulster (Coordinator)	South Eastern Health And Social Care Trust NHS (SET)
Dublin City University (DCU)	Health and Social Care Board (HSCB) Business Services Organisation (BSO) NI
City of Oulu University	Health Service Executive (HSE) Ireland
VTT: Technical Research Centre of Finland	Finland's National Institute for Health and Welfare (THL)
VICOMTECH (Spain)	BIOEF Public Foundation of the Health Department of the Basque Government
KU Leuven, Department of Electrical Engineering-ESAT (Belgium)	Department of Health Public Health England (DH PHE)
Industry: IBM Ireland	Arizona State University/ Mayo Clinic
SME: Analytics Engine (UK)	
SME: Quintelligence (Slovenia)	







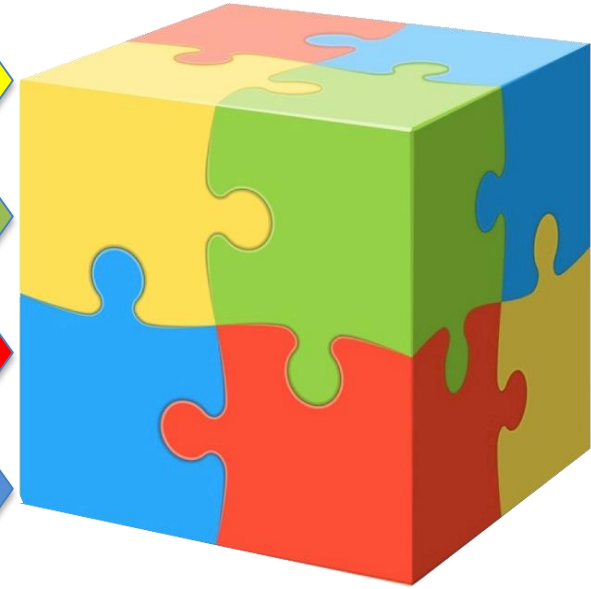


1. Access Heterogeneous Data Sources for Policies Including Governance & Consent

2. Data Connector Layer

3. Data Analytics Layer

4. Visualization Tool for Policy makers



- Increasing Aging Population
- Less Resources & Finances in Health Care
- Fractured Heterogeneous Data for Policies

Current Unstable Infrastructure

- Improved Data Access
- Enhanced Policy Creation & Effectiveness
- Empowered Patient

MIDAS Platform Supported Stable Infrastructure

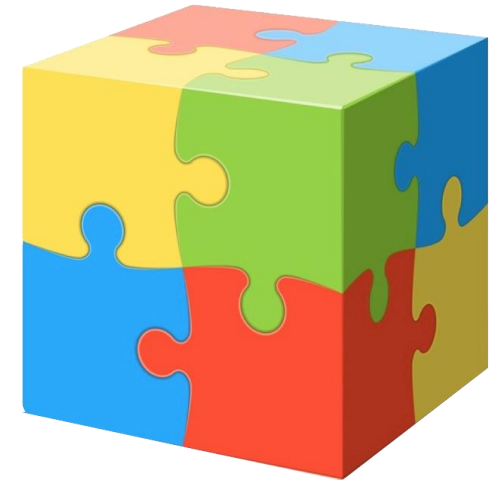
**Stakeholders: Policy Board Members -
Testing, Evaluation & User Feedback
Leading Solution Drivers**

1. Access Heterogeneous Data Sources for Policies Including Governance & Consent

2. Data Connector Layer

3. Data Analytics Layer

4. Visualization Tool for Policy makers



MIDAS Platform For Policy Makers

Emerging data driven analytics

- = **Meaningful, Actionable Information for Prevention & Risk Stratification**
- = **Co-created Benefit to Citizens and Stakeholders**

- Policy Review ,Forecasting ,Simulation, Effectiveness
- Technical Consortium

- [Machine Learning], Forecasting, Simulation
- Technical Consortium

- Connect Internal & External Existing data Sources
- Technical Consortium

- Data Sources: OpenData (EU), MyData (FI) Open Data Providers
- Data Consent & Governance: Ministries of Health in partner regions

**Stakeholders: Policy Board Members - Testing, Evaluation & User Feedback
Leading Solution Drivers**

Automated
pipelines



Development
sandbox (R/ Python)



Patient
reporting



ENTERPRISE DATA VIRTUALISATION LAYER



Document
management
systems



Public Health
records



Patient /
Clinical records



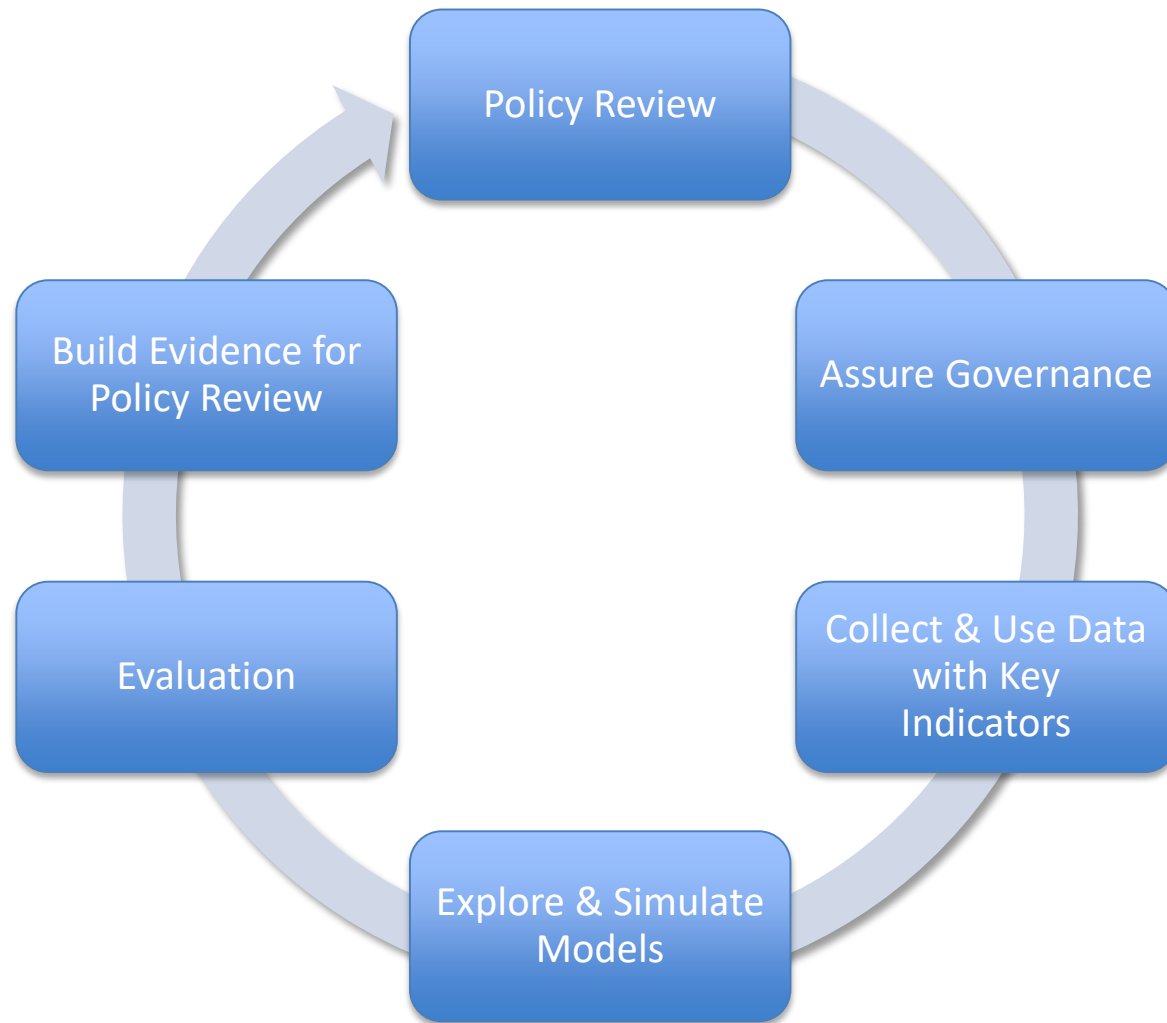
Imaging data
(MRI/Pathology)



Business
intelligence
systems

Improved Policy Process

Grant Agreement No. 727721



This project is funded by
the European Union

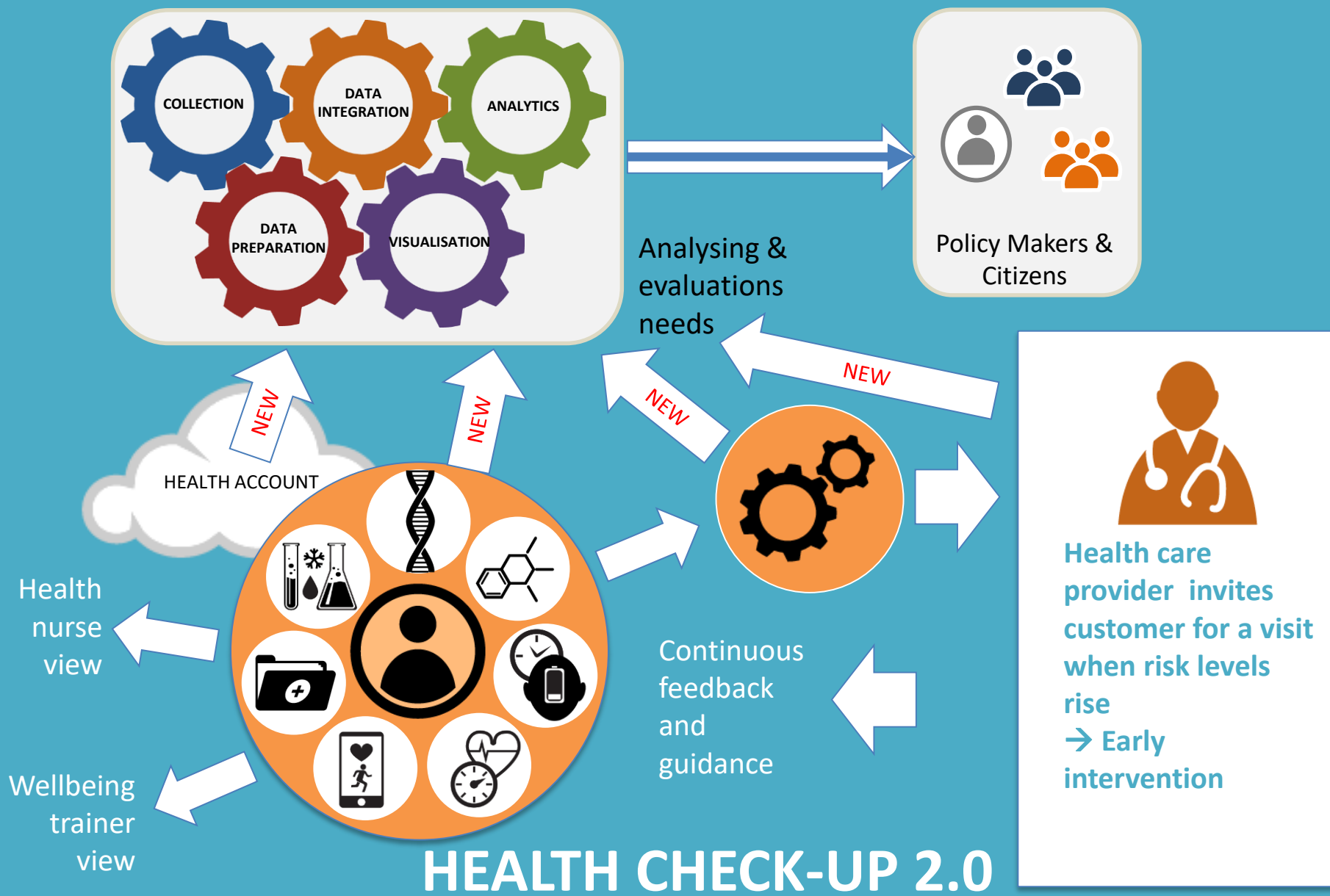


<http://www.midasproject.eu>



@MIDASProjectEU

MyData in MIDAS



Policy Board Members Pilots

Grant Agreement No. 727721

- **Key stakeholders** have been identified from each pilot and with them the most relevant scenarios and user stories for the pilot topic:
 - **Basque Country (BIOEF)**: Child overweight and obesity prevention prioritised policy
 - **Finland (THL)**: Preventive mental health and substance abuse of young people
 - **Northern Ireland (BSO)**: Children in Care
 - **Republic of Ireland (HSE)**: “Healthy Ireland” framework and related policies



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU

Co-creative Workshop on User Personas

Grant Agreement No. 727721

1. **Decision makers and public health authorities:** who mainly use predefined dashboards. They need to be aware of the current and past situation of the health domain and be able to test the outcomes of possible decision scenarios
2. **Information Officers:** the supporting personnel of health care policymakers, who create the dashboards for the first group according to the current need
3. **Data Scientist:** the health care research oriented users, who can even develop the analytics further, define new forecasting models and analytics scenarios
4. **System management:** updates health system metadata, maintains interfaces to virtual data storage, grants access rights to users

In addition we added 2 new personas:

5. **Clinical Policy Directorate**
6. **CEO of a Charity**



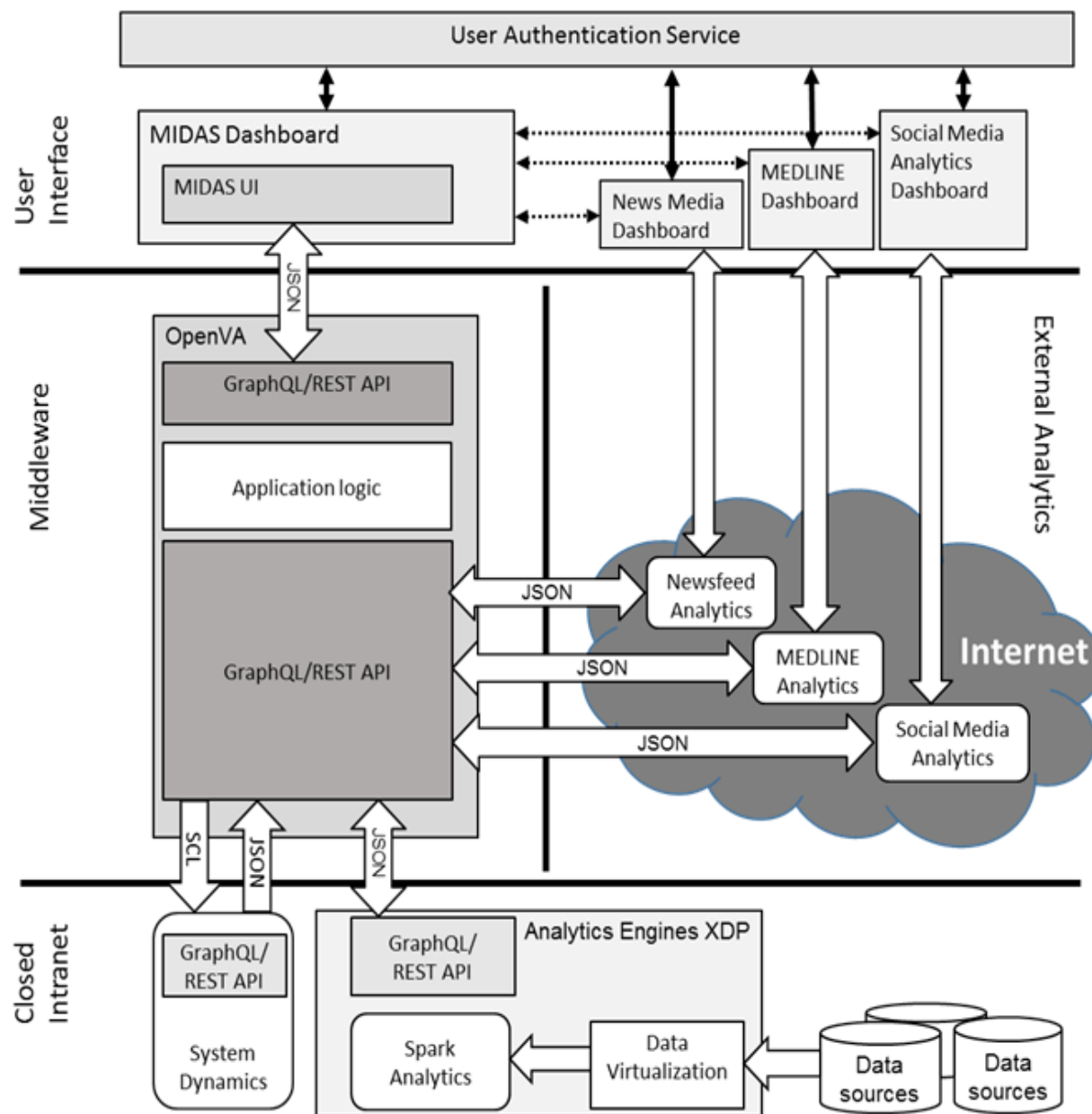
This project is funded by
the European Union



<http://www.midasproject.eu>

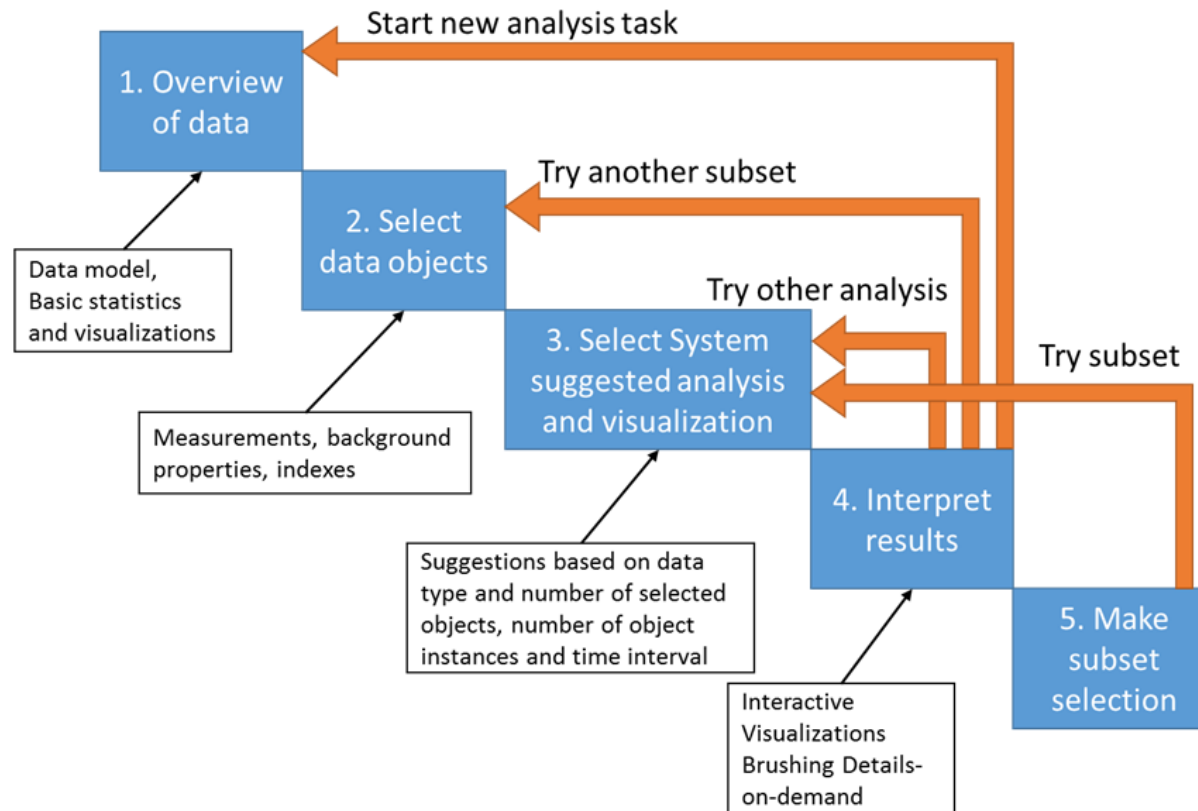


@MIDASProjectEU



Reasoning Loop Logic

Grant Agreement No. 727721



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU

MIDAS Dashboard Demonstrator

Grant Agreement No. 727721



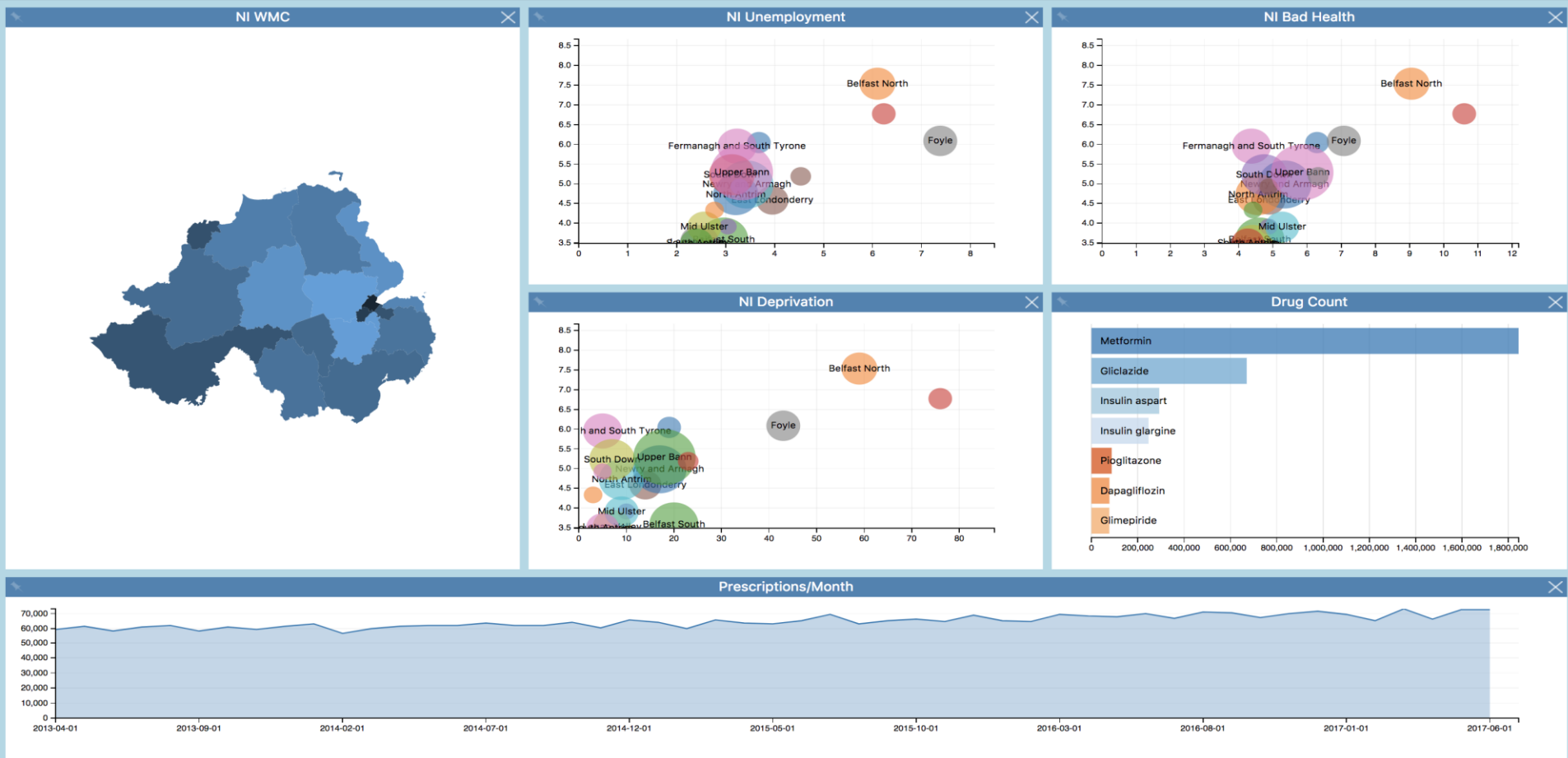
This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU



Social Media - Our Goal

Grant Agreement No. 727721

*Capture the "voice of the public" through open social data.
To provide a clear picture to policy makers, so they can
make better informed decisions.*

By building a tool that



Allows policy
makers to create a
custom campaign



That drives a
twitter chat bot
to engage with
the public



Analyze and
aggregate the
data so that it can
be read easily



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU

Chatbots and Social Media

Grant Agreement No. 727721

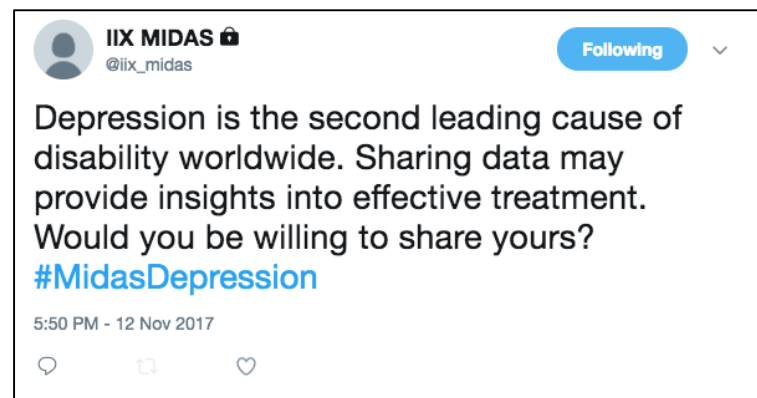
Our application



Uses the Twitter API



To post a question to the public via a tweet



We are free to Tweet them
back and ask them to start
a direct message session
with a chatbot



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU

WP 2 - Ethics Governance & Consent

Grant Agreement No. 727721

- Personal Identifiable Data (PID) or Personal Identifiable Information (PII) is data from which individuals may be identified
- Issues around using PID/PII
 - Identifiable data can be used without an individual's consent for various purposes (Great Britain, 1998)
 - The GDPR states that anonymised data is not subject to data protection considerations (The European Parliament and the Council of Europe, 2016)
 - However, linking disparate datasets represents a real risk to anonymity (Cohen et al., 2014)
 - Jigsaw Identification (Wellcome Trust, 2016)
 - Public perceptions of data usage?



WP 2 Continued

Grant Agreement No. 727721

- PHE will conduct primary research to explore public perceptions concerning the use of PID
- How do public perceptions of data sharing vary depending on:
 - type/ nature of data
 - the context of sharing and
 - the recipient organisation?



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU

Quintelligence Demos

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

POINT

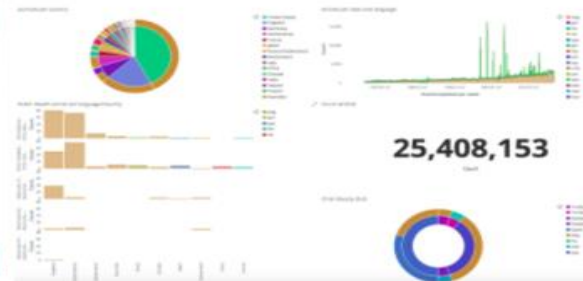
INTELLIGENCE



is the clustered
EDLINE/PubMed
for a keyword.
ps surfacing
, avoiding the
d by definition.
y language with
(private) that can be
sed with this

EventRegistry collects and annotates in real-time news articles published by over 100,000 news publishers worldwide. It provides the user with public health news articles in 10+ languages as well as world events mentioned in these articles, permitting to explore what is currently being reported about in the media worldwide. If you are not interested in all the events you can easily limit the list of articles and events displayed based on specific interests, location, etc.

The Kibana dashboard permits the user to profit of data visualisation modules that feed on his/her data sets built in ElasticSearch. This tool enables one to query the dataset and produce different types of data visualisation modules that can later integrate a customised dashboard. Kibana can be used in any language with any document set (public or private) that can be indexed, analysed and visualised with this approach.



midas.quintelligence.com

This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU



QUINTELLIGENCE
Intelligent Knowledge Management

European Commission

Partners

MIDAS Project Coordination Committee

Project Coordinator

Scientific & Technology
Committee

Scientific & Technical Manager

Participant
Managers

Dissemination, Exploitation &
Communication Committee

Dissemination, Exploitation &
Communication Manager

Innovation
Manager

Quality
Manager

Ethical and Privacy Advisory
Group (EPAG)

Policy Board Chair & Co-chairs
(Policy, Ethics & Governance)

WP1

WP1 .. WP 8

WP Leaders

T1.1

T1.2

T1.3

Task Leaders

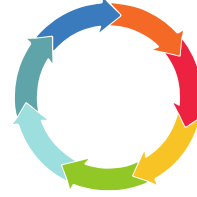
WP8 – Ethics Requirements



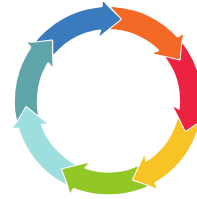
WP2 -Governance, Consent and Privacy



WP5 – Policy Visualisation



WP4 – Data Analytics & Simulation



WP3 – Data Mapping



WP6 - Evaluation and Impact Assessment

WP1 - Project Management & Coordination

Startup

UCD Iteration 1

UCD Iteration 1

Shutdown

WP2 - Governance,
Consent & Privacy

WP8 – Ethics
Requirements

WP2 - Governance,
Consent & Privacy

WP8 – Ethics
Requirements

WP3 - Architecture & Data Sources

WP3 - Architecture & Data Sources

WP3

WP4 - Data Analytics & Simulation

WP4 - Data Analytics & Simulation

WP4

WP5 - Data Visualisation for Public
Health Decision Making

WP5 - Data Visualisation for Public
Health Decision Making

WP5

WP6 – Integration Evaluation & Impact
Assessment; WP2 Evaluation of Prototype;
WP5 UI Testing & Validation

WP6 – Integration Evaluation & Impact
Assessment; WP2 Evaluation of Prototype;
WP5 UI Testing & Validation

WP7 - Project Dissemination, Exploitation & Awareness Raising

MIDAS - Achievements to Date

Grant Agreement No. 727721

- Strong Policy Board Interaction
 - Cross Site Visits
 - Sharing of Current Practice
 - Growing Policy Board
- Impact journal and conference papers
- Workshops
- Pilot case videos
- Show Case & Dissemination Events
 - Brussels – November 2016
 - BIOEF - Bilbao – February 2017
 - Helsinki – June 2017
 - 16 November 2017 -
MIDAS Platform Co-Design Workshop, **Focus On Big Data in Health**, Belfast
 - 17 November 2017 - **MIDAS Consent, Ethics & GDPR Workshop**, Ulster University



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU

Thanks



Paul.carlin@setrust.hscni.net

<https://www.youtube.com/watch?v=24E5LWp-Pz8>



This project is funded by
the European Union



<http://www.midasproject.eu>



@MIDASProjectEU