

Atos
Trusted Digital Partner



SparkInData

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Berlin, 14. März 2017



Earth Observation data evolution

Context & Opportunities

80's/90's

2000-2015

2015-2020

2020+

**Historical
Data**

**Public
Observation**

**BigData
Era**

2020

Few earth observation programmes which produce few data destined for an expert community

Usage of earth observation data by a large community

Increase of the public awareness of earth observation interest

Many European and international earth observation programs which produce a large quantity of data

New market segments are emerging

Integration of Earth observation data in the flux of "internet of everything"

Exponential growth in the number of satellites

Significant increase in the development of the market and associated income

**revisit
time**

In weeks

In weeks

In days

In hours

Volume

In TB / year / captor

In TB / year / captor

In PB / year / captor

In 10xPB / year / captor

Codex - SparkInData

What is SparkInData ?





Connected To



Satellite

Currently connected to the Copernicus data with its Sentinel constellation, the platform uses these images and derives high added value products through its services.

Aero

Aero Imagery is injected into our services to bring more accuracy, reduce the revisit time and complement the wealth of available satellite imagery.

In Situ

Networks of in-situ domain specific sensors bring in additional value to earth observation measurements. SparkInData is currently connected to European datasets of geological information.

Modelling

Through the availability of predictive models, the platform is capable of building projections using the available reference data.

➤ Multiple Sources

- Access to various sources of geo-localized data
- Easy data ingestion and exchange
- Adoption of dissemination & processing standards

➤ Interoperable & service oriented platform

- All function is accessible online through web technologies
- A federative approach of platforms
- Processing modules or chains between users

➤ HPC / Big Data

- Connection with an HPC for tasks requesting huge processing capacities
- Cloud infrastructure based on container technology

➤ Prototyping of new services

- Environment ready to use for prototyping new services
- Service incubator

THE ENABLER

BUSINESS MODEL



SparkInData

Our Services



Agriculture

› Benefiting from Copernicus data to derive and map crop maturity and expected yield estimates



Defense

› Geodata at the service of geointelligence



Energy

› InSAR techniques to map the land movement and its impact on infrastructure



Environment

› Use multisource satellite data to study the habitat of various species



Local Authority

› Multitemporal satellite imagery to model urban growth and



Oceanography

› Monitor the ocean state and derive various parameters like



Add Your
Own Service

TECHNICAL STRENGTHS

› Design Thinking

- Clear approach for definition, design and deployment of new services
- Exploration of new usages for partners

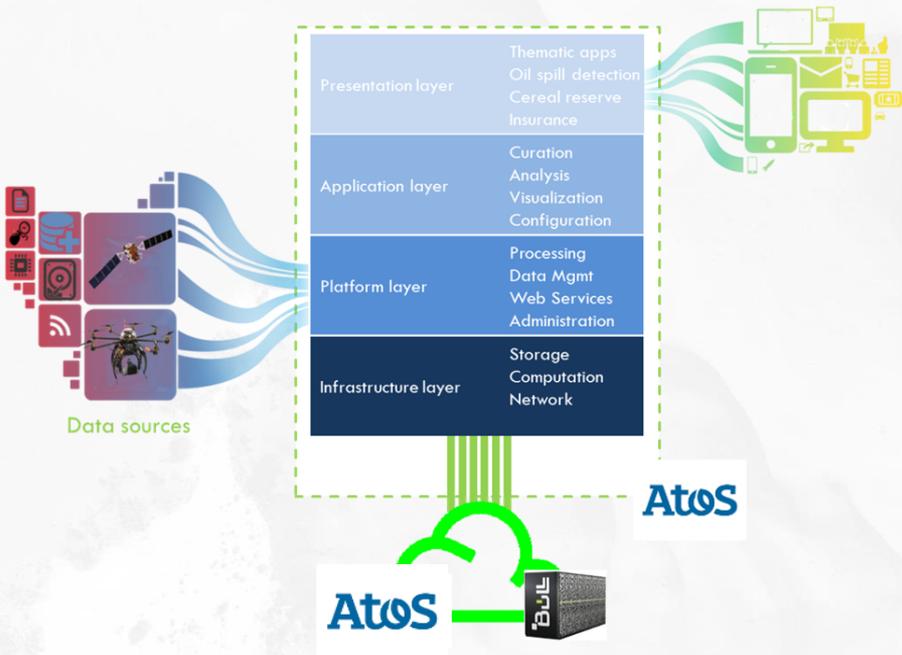
› Partners

- Several types of partners : data providers, algorithm, service or infrastructure
- Large institutions, research laboratories, IT partners, industrials and SME

› Customer Portfolio

- Several markets targeted: agriculture, local authorities, environment, defense, oceanography, energy, insurance, aerospace, ...

BUSINESS MODEL



TECHNICAL STRENGTHS

THE ENABLER

➤ Market Place

- Pay as you use model for infrastructure, platform, software, data or information
- Limited integration costs
- High visibility of deployed applications & services
- Multiplication of revenue streams
- Easiness of collaboration

➤ Return on investment for partners

- Direct monetisation of services
- Feedback on the service usage
- Continuous increase of the targeted audience

Data is enhanced with user feedback, meeting the user needs with the data offers

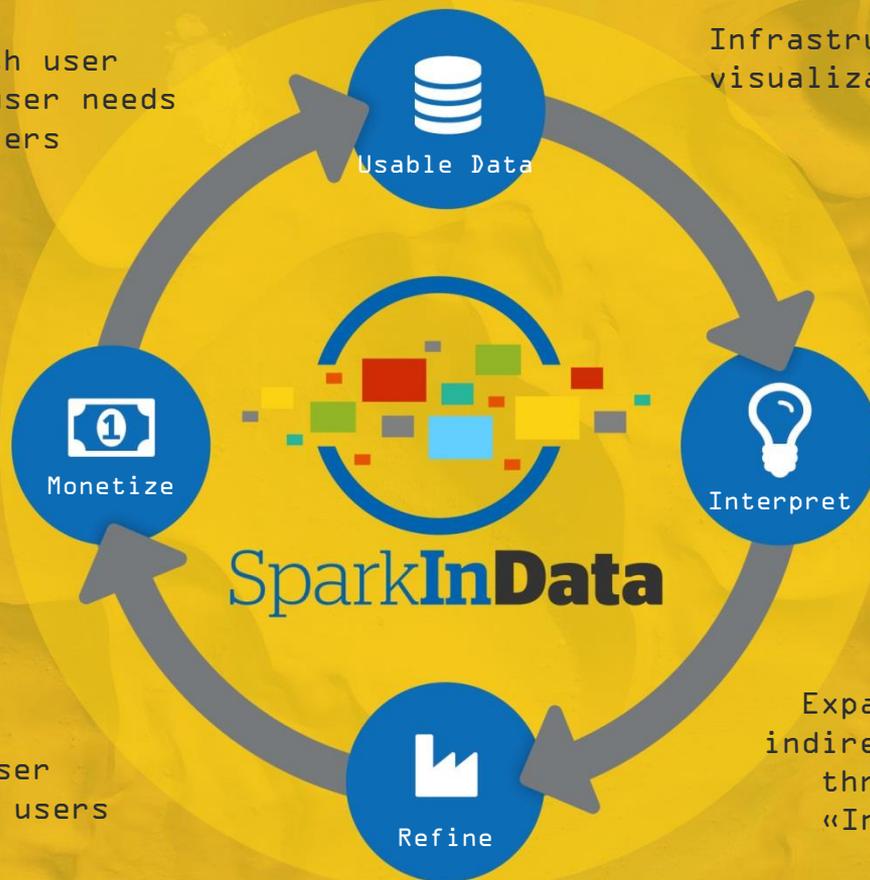
Infrastructure, analysis tools, of visualization and provision of the Platform

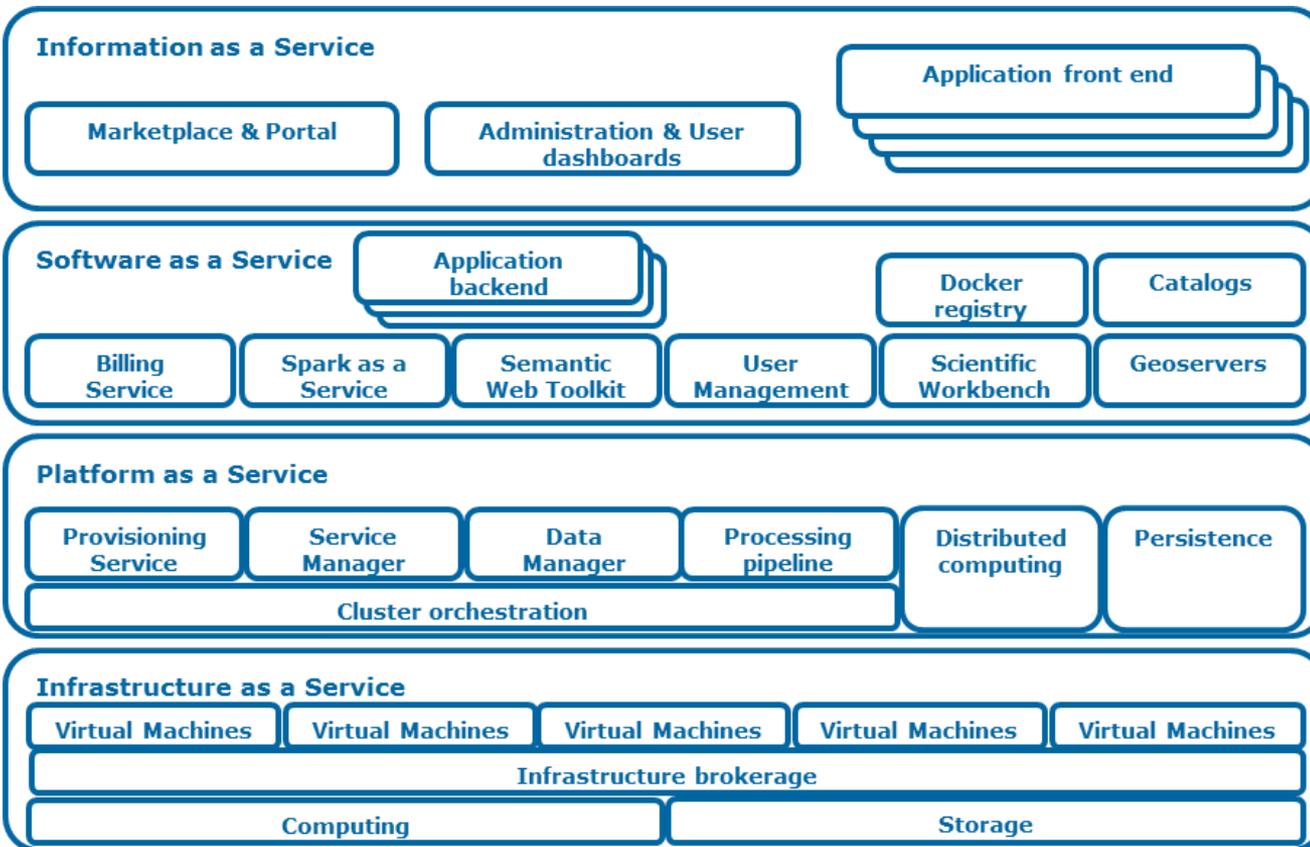
Each contributor receives a return on investment

Customization of available resources for each use case

Development of user communities and new users

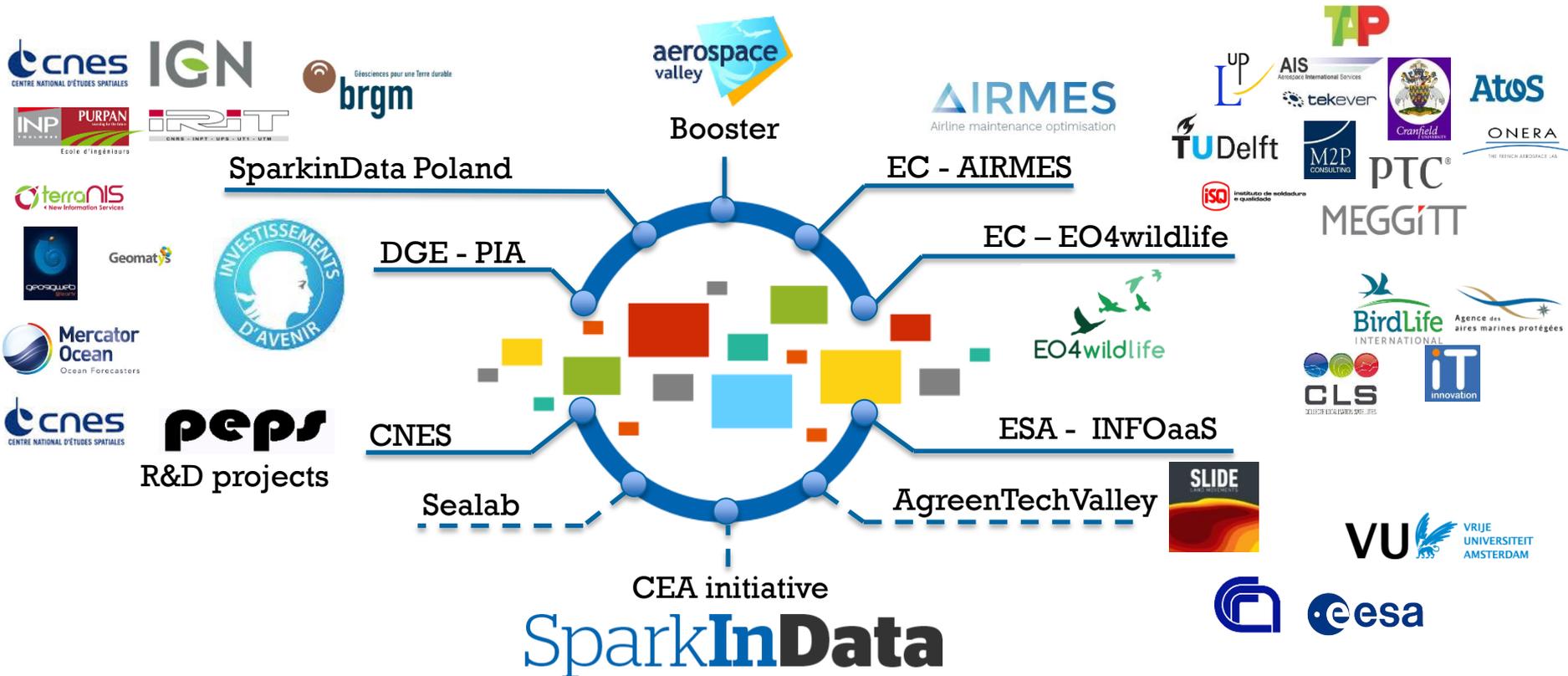
Expand the information and indirect value creation offer, through the links to the «Internet of Everything»





Codex SparkInData

Underlying project





EO4wildlife - European Commission

Objective

- ▶ Stimulating wider research use of Copernicus Sentinel Data by convincing thousands of biologists, ecologists, scientists and ornithologists around the world to use more and better European Sentinel Copernicus Earth Observation data
- ▶ Set up an operational **easy-to-use platform** to query, search, mine and extract information from Sentinel EO data, ARGOS archive databases and real time thematic databank portals
- ▶ Provide additional functionalities via a toolbox: **connections to other external databases** (owner database)



Consortium – 7 partners

- ▶ Atos Spain Research & Innovation
- ▶ Atos FR C&SI
- ▶ CLS – Collecte Localisation Satellites SA
- ▶ Agence des aires maritimes protégées
- ▶ Birdlife International
- ▶ University of Southampton – IT Innovation
- ▶ University of Exeter

Atos Role

- ▶ Provide a data oriented platform and its associated toolbox with highly flexible services that can be utilised regardless of the research field, skills and objectives



- Predicting seabird distributions - Seabird tracking data and oceanographic variables can be combined to develop predictive habitat utilisation and species distribution models



- Better knowledge of pelagic fish's migrations routes and habitat use - The use case will focus more specifically on Blue fin tuna species in the Mediterranean and North Atlantic regions



- Copernicus Sentinel data for MPA managers to provide them with reliable tools for surveillance on human activities in MPAs



- Identifying marine turtle behaviours - The final objective of this scenario is to support scientists involved in marine turtle studies to predict turtles' distributions

Thank you

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