LESSONS LEARNED FROM SUCCESSFUL INNOVATION PROCUREMENT PROJECTS (PCP & PPI)

WORKSHOP-WEBINAR

15 February 2022

WEBINAR - WORKSHOP

Innovation Procurement:
Lessons Learned from successful PCP & PPI Projects

15 February 2022
9.30 - 13.30 CET

Watch the replay video of the webinar via: https://youtu.be/UhX-PmIbpMQ

Welcome

Stephan Corvers
CEO & Founder

Corvers Procurement Services BV

Introduction & Agenda

House rules

It is possible to ask questions in the private chat

The recording of the webinar will be made available on the EAFIP website

The list of participants will not be disseminated

In case there are technical problems, the session will be recorded and published

PART I

TIME (CET)	TOPIC	SPEAKER/PARTICIPANTS
9:25 – 9:30	Registration to the platform	Participants can ensure that the platform's functionalities are working fine
9:30 – 9:35	Welcome & Introduction House rules Agenda	Stephan Corvers CEO – Corvers Lieve Bos EC Policy Officer - DG Connect
9:35 – 10:15	Central Distribution Layer (CDL) 2.0 GKW - Gegevens Knooppunt Waterschappen Data Interface point Public buyer perspective	Sanne Wijnhorst Manager Procurement Het Waterschapshuis, The Netherlands
10:15– 10:25	Q&A	
10:25 – 10:35	COFFEE BREAK	

PART II

10:25 – 10:35	COFFEE BREAK	
10:35 – 11:35	Cyber Security Operations Center SDAPA ICT procurement procedure EUIPA 2021 winner – Procurement leadership category Public buyer perspective	Francesco Talone Stefano Moni Giuseppe Restivo Central Directorate of Criminal Police in Rome, Italy
11:35 – 11:55	SDAPA ICT procurement procedure Supplier perspective	Dario Lauricella Fabrizio Mancini Alfa Group
11:55– 12:05	Q&A	
12:05 – 12:10	COFFEE BREAK	

PART III

12:05 – 12:10	COFFEE BREAK	
12:10 – 12:30	ARCHIVER Archiving and preservation for research environments European Open Science Cloud (EOSC) Public buyer perspective	João Fernandes CERN Senior Member of Staff - IT Department ARCHIVER project coordinator
12:30 – 12:50	ARCHIVER Supplier perspective	Tom Lynam Marketing Director Arkivum
12:50 – 13:10	ARCHIVER Supplier perspective	Teo Redondo Libnova
13:10 – 13:20	Q&A	
13:20 – 13:30	Conclusions & future events	Stephan Corvers

PART I

Central Distribution Layer (CDL) 2.0 GKW - Gegevens Knooppunt Waterschappen

Sanne Wijnhorst
Procurement Manager
Het Waterschapshuis, The Netherlands

EAFIP - Lessons Learned from Innovation Procurement Project

From CDL to GKW

15 February 2022   Sanne Wijnhorst
                     s.wijnhorst@hetwaterschapshuis.nl

Sanne Wijnhorst

Manager Procurement and Contracts Management at het Waterschapshuis (hWh).

Het Waterschapshuis is the management and implementation organization for the 21 water boards in the field of information and communication technology

Amersfoort

A bit of history

Data and publication requirements

- A LOT of water related (spatial) data is generated for day-to-day operations

- Mostly open data that needs to be made publicly available by

  - Dutch law – Wibon, BGT

  - European law - Inspire

- Actions taken:

  - Harmonisation in data reporting;

  - Eafip project to procure

    A single ICT solution to make the same data available through a single (set of) channel(s) to the end-user or added value provider
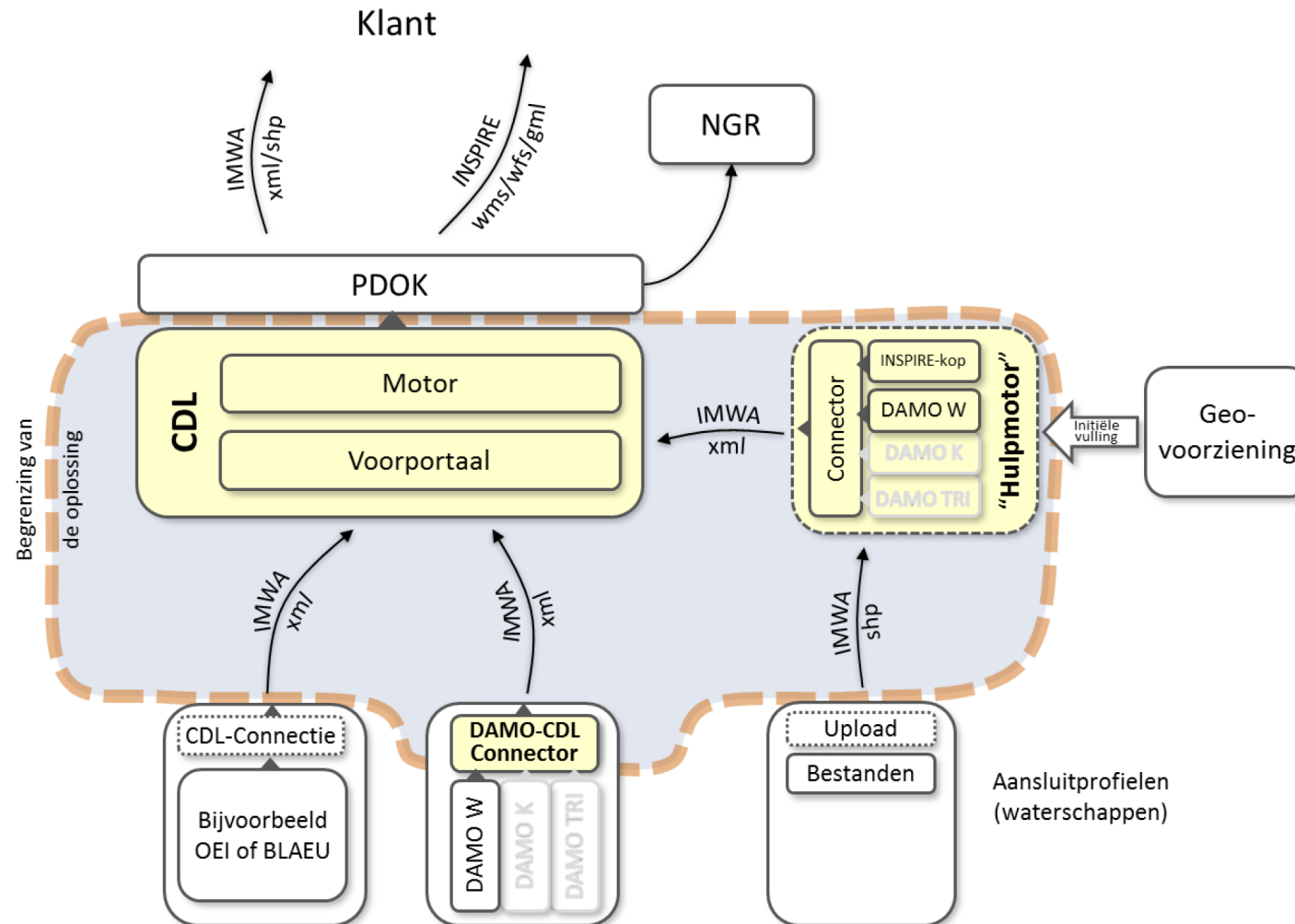
The CDL story

Initial architecture

Initiële architectuur CDL

Procurement process

- Idea was to functionally specify our requirements and procure a vendor specific solution for a 'one step solution'

- While writing our specifications more and more technical requirements were introduced

- IMWA (Information Model WAter) was main technical principle

- The winner of the tender was the best in that specific solution; the CDL was born

Our learning process

- What we found out (quite quickly):

  - The solution contracted was not flexible enough to solve other issues, transport other datasets to the same end-user, or include different end-users

  - Everyone involved (also the supplier) needed to have extensive knowledge about the meaning and use of the data for the solution to work properly

  - It was not clear enough who had what tasks and which responsibilities

- We tried to adapt the CDL with the supplier within the confines of the contract. This was very complicated

- In 2020 we performed a 'proof of concept' with the supplier where we built a miniature version of a new CDL that tackled the issues mentioned above

The **GKW** story

GKW architecture
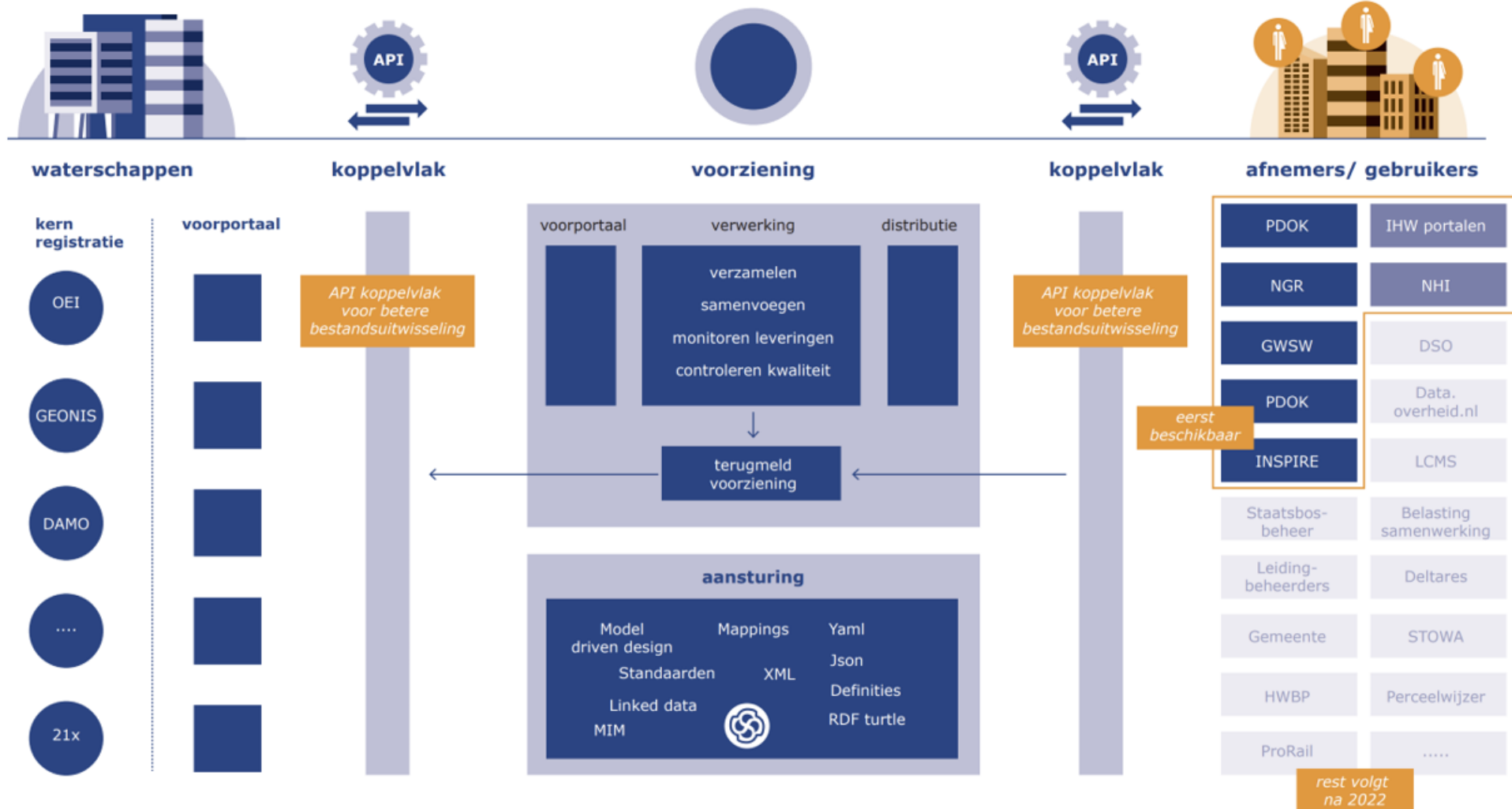
A new procurement process

- A more abstract approach to sharing of data.
  - Sharing of data is our main focus, regardless of the type of data
  - Suppliers need to be specialists in 'sharing and flowing' of data
  - hWh brings in technical knowledge about the meaning of the data
- This opened up a completely new set of suppliers.
- A new supplier won the tender process; the GKW was born

Take aways

- Look at the solution from a higher abstraction level
  - Data specific knowledge needs to be taken out of the sharing process
- Design with the possibility of further and future developments in mind
  - Make sure that new components (potentially from other suppliers) can always be added.

De kracht van samen

Q&A

COFFEE BREAK

PART II

Cyber Security Operations Center
SDAPA ICT procurement procedure

EUIPA 2021 winner – Procurement leadership category

Public buyer perspective

Stefano Moni
Giuseppe Restivo
Francesco Talone

Central Directorate Criminal Police in Rome, Italy

EAFIP WORKSHOP-WEBINAR #4
INNOVATION PROCUREMENT: LESSONS LEARNED FROM SUCCESSFUL PCP & PPI PROJECTS
THE PUBLIC BUYER PERSPECTIVE

Subject: *Horizon Europe*
Prize: *The European Innovation Procurement Awards 2021*
Call: *HORIZON-EIC-2021-InnovationProcurementAwards*
Proposal: *C-SOC SDAPA ICT*

Winners of the procurement leadership category

Ministry of Interior – Public Security Department – Criminal Police Central Directorate – Data Protection Office

- **Stefano Moni, Italian National Police, Senior Technical Executive (NATO OF-6)**

- **Giuseppe Restivo, Italian National Police, Technical Officer (NATO OF-2)**

- **Francesco Talone, Italian National Police, Technical Officer (NATO OF-2)**

Summary

1. Preamble

2. C-SOC briefly

3. Legal framework

4. Funding

5. Procurement leadership

6. Procurement facts and figures

7. Ethics

8. C-SOC SDAPA ICT innovation principle

9. C-SOC SDAPA ICT innovative features:
   - Transformation
   - Uptake
   - Collaboration
   - Societal impact

10. SDAPA ICT Playback Demo

Preamble

The C-SOC SDAPA ICT is a big, long lasting, *rendez-vous*:

- Innovation Procurement practices met personal data protection and information security
- People met changes (new procurement practices and new cybersecurity supplies)
- Security governance, risk management and compliance met innovation and European funding
- A representative slice of the cybersecurity market (SMEs and Bigs) met Central Public Administration needs

Noteworthy negative externalities:

- COVID-19 pandemic, which has been successfully overcome by totally de-materialized tender (SDAPA –ICT)

Lesson learned:

- Once reached, European funding is a stronger "change management booster" than European regulations

C-SOC briefly

- The mission of a Cyber Security Operations Center (C-SOC) is the real time monitoring and the continual improvement of the organization's security posture by ensuring prevention, detection, analysis and response to security incidents, using technology and well-defined procedures.

- In our case, the capability of monitoring cyber events must be integrated across the following law-enforcement information systems:

1. National investigative information system (Italian Law nr. 121 of 1981);

2. National DNA information system (Prüm Decision);

3. National Schengen Information System (Schengen Acquis);

4. 112 Single Emergency Call Number.

Legal framework

1. <u>Public contracts law</u>: Italian legislative decree 2016/50 art. 55 (Dynamic Acquisition Systems - SDA) transposition of EU Directives:
   - 2014/23/UE
   - 2014/24/UE
   - 2014/25/UE

2. <u>Security of data processing and notification of a personal data breach to the supervisory authority without undue delay</u>:
   - GDPR art. 32, 33, 34;
   - Italian legislative decree 2018/51 art. 25, 26, 27 (transposition of EU Directive 2016/680 - LED);

3. National cybersecurity guidelines (since 2017)

Funding

Funding: Internal Security Fund – Police 2014-2020

- Project no. 46.6.5 ([Progetto 46.6.5 | Fondo Sicurezza Interna 2014-2020 (interno.gov.it)](interno.gov.it))
- Specific objective nr. 6 "Risk and Crisis",
- National Objectives nr. 5 "Infrastructures" and nr. 7 "Risk and threat evaluation"

Total amount: approximately 2.000.000 € (VAT included) divided among:

- Technology and training on the job (72%)
- Process design and training on the job (24%)
- People training and certification (3%)
- Advertising (1%)

Time: the project lasted 35 months

- Kick-off: June 2018
- End: April 2021

Procurement leadership

- Leadership roles:
    1. Stefano Moni had the role of **Project Representative** (Project sponsor with contract's approval and financial statement duties).
    2. Francesco Talone had the role of **Project Manager** (Project definition and management: time, costs and performances monitoring duties).
    3. Giuseppe Restivo had the role of **Procurement Manager** (Market analysis and tenders design).

- The implementation activities required several **fundamental phases** with clear owners/team leaders:
    A. Carrying-out feasibility study (Francesco Talone)
    B. Getting funds approval (Stefano Moni)
    C. Carrying-out in-depth market's analysis (Giuseppe Restivo)
    D. Planning and launching administrative procurement procedures and training administrative personnel (Giuseppe Restivo)
    E. Executing contracts and assessing results (Francesco Talone and Stefano Moni)

- Various procurement procedures had been involved in the project

- The most innovative one was the fully de-materialized negotiation tool **SDAPA ICT (Public Administration's Dynamic Acquisition System for Information and Communication Technology)**

Procurement facts and figures

Approximative contracts breakdown: BIGs <70% - SMEs >30% of the whole budget

We outperformed Pareto principle

(80%-20%)

CONSIP's Framework Agreements absorbed more than 50% of the whole project budget (55%).

The C-SOC SDAPA ICT absorbed more than 25% of the whole project budget (28%).

Tenders below the threshold absorbed less than 20% of the whole project budget (17%).

The complexity of procurement strategy design and governance reflects the multidisciplinary implementation of various fields of knowledge: technological (cyber security expectations), administrative (European funds project management) and legal (compliance with regulatory issues about procurement and personal data protection in law-enforcement data processing).

Ethics

- **<u>In our opinion, once procurer put ethics at the first place among procurement requirements, suppliers can only compete on a quality and price basis. There is not ground for bribery.</u>**

- The C-SOC SDAPA ICT, fully compliant with European laws and directives, was inspired by the principles of:
  - free competition,
  - non-discrimination,
  - transparency,
  - proportionality,
  - as well as advertising within procurement.

- Furthermore, the **<u>fundamental right </u>**of personal data protection has driven the whole project.

- The project team was extremely structured and organized by means of <u>clear roles and separation of duties</u>. Employing European funding, <u>periodical monitoring and regular audit</u> carried out by the Italian ISF 2014-2020 Authority and by the DG HOME of European Commission ensured a <u>pervasive awareness of behavioral ethics and compliance to regulations.</u>
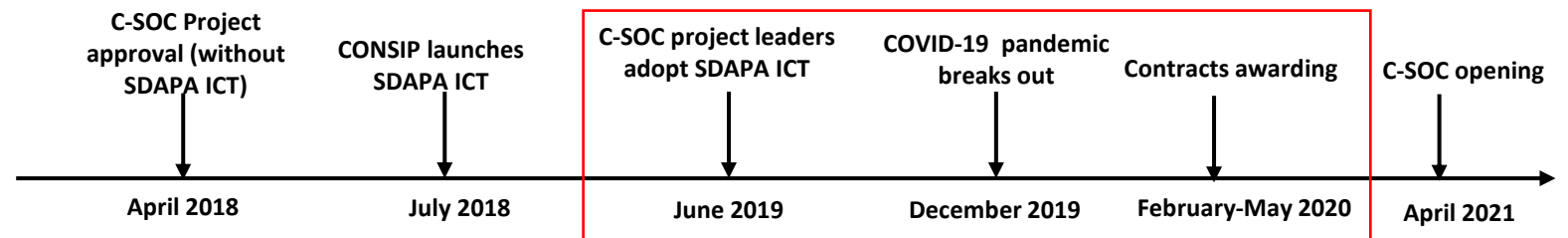
C-SOC SDAPA ICT innovation principle

<u>Scalable and replicable innovation</u> does not derive from innovative cybersecurity services and products individually taken but mainly from the intelligent fusion and integration of services and products throughout the entire cybersecurity project.

- People
- Processes
- Technologies

Innovative features of C-SOC SDAPA ICT: Transformation

- Through the SDAPA, the Public Administrations can <u>negotiate tenders autonomously on an electronic platform</u> compliant with legal rules.

- At the time of project approval, SDAPA ICT wasn't yet available and <u>the procurement strategy was based on traditional tenders</u>.

- The team involved in this proposal was able to promptly intercept, during the project conduction, the <u>opportunity to introduce a new procurement procedure such as SDAPA ICT capable to lighten the overall purchasing lifecycle</u> while, at the same time, reaching <u>a larger audience</u> of business operators.

  - It was a deep re-planning effort rewarded when, in 2020, the COVID-19 pandemic congested the supply chain.

C-SOC Project approval (without SDAPA ICT)	CONSIP launches SDAPA ICT	C-SOC project leaders adopt SDAPA ICT	COVID-19 pandemic breaks out	Contracts awarding	C-SOC opening
April 2018	July 2018	June 2019	December 2019	February-May 2020	April 2021

Innovative features of C-SOC SDAPA ICT: Uptake

THE SDAPA PLATFORM IS DIVIDED INTO PRODUCT CATEGORIES AND SUB-CATEGORIES.

OUR SDAPA PROCUREMENT PROCESS WAS DIVIDED INTO 5 FUNCTIONAL LOTS.

EACH LOT, ALTHOUGH LAUNCHED IN PARALLEL WITH THE OTHERS, REPRESENTED AN INDEPENDENT TENDER, SO THAT THE ECONOMIC OPERATORS COULD SUBMIT A BID FOR ONE OR MORE LOTS, THEORETICALLY FOR ALL THE LOTS.

THIS PROCUREMENT STRATEGY ENCOURAGED A PERVASIVE PARTICIPATION OF BOTH SME AND LARGEST ENTERPRISES, ENABLING A GREAT SHARING OF OPPORTUNITIES.

acquistinretepa.it
Il Portale degli acquisti della Pubblica Amministrazione

Appalto specifico "Cyber SoC"
ID Negoziazione: 2309468
Codice univoco IPA: 0CS8J4

INFORMAZIONI GENERALI	
Criterio di aggiudicazione	Prezzo più basso
Presentazione delle offerte al netto di IVA	Si
Ordinamento delle offerte	Al ribasso
Unità di misura delle offerte	Valuta euro
Valore Appalto specifico	492.000,00
Durata del contratto (n° mesi)	24
Cifre decimali offerta economica	2
Soglia di rilevanza comunitaria	Sopra soglia
Numero Lotti	5

DETTAGLIO LOTTI		
N°LOTTO	DENOMINAZIONE	CIG
1	Lotto 1 Postazioni di lavoro per gli Analisti IT	Non previsto
2	Lotto 2 Fornitura di licenze WMware per la realizzazione dell'infrastruttura tecnologica.	Non previsto
3	Lotto 3 Rinnovo Licenze Software	Non previsto
4	Lotto 4 Computer Forensics	Non previsto
5	Lotto 5 Networking apparati di rete	Non previsto

Innovative features of C-SOC SDAPA ICT: Collaboration

- <u>More than 3000 business companies had been invited and involved in the project</u>. Thanks to the multiple lots SDAPA ICT tender, all the European and National enterprises registered on the Consip platform had the opportunity to participate at the innovative C-SOC project in a totally telematic way.

  - Lot 1 (**<u>awarded to a SME</u>**): implementation of the operations room

  - Lot 2: virtual IT infrastructure of the C-SOC

  - Lot 3 (**<u>awarded to a SME</u>**): software solutions for security assessment

  - Lot 4 (**<u>awarded to a SME</u>**): digital forensics hardware and software

  - Lot 5 (**<u>awarded to a SME</u>**): latest generation networking devices

- Each lot awarded to a different business operator, even though largest companies offered for several lots

- The five lots supply chain, <u>designed as a single tender but with different lots</u>, assured synergies and cooperation among the awarded business operators, <u>without lack of continuity in the contract's execution as were a unique contract</u>.

Innovative features of C-SOC SDAPA ICT: Societal impact

- The C-SOC supply chain, comprehensive of people training (more than 2.500 human hours), process design and technology implementation (capable to manage 7.500 events per second and 150.000 network's traffic flows per minute), <u>has helped the law-enforcement agencies to reach the ambitious goal of being capable to timely intercept and notify a personal data breach, compliant with the EU directive</u> 2016/680 aimed at natural person protection with regards of personal data processing.

- Furthermore:
  - satisfies the needs of incident response, compliance and forensic analysis.
  - enhance business continuity and physical security.
  - ensure the well-being of the IT Security Analysts, avoiding problems of work-related stress.

SDAPA ICT Playback Demo

Backup

- In our opinion, procurement leadership practice deal with two main order of leading capabilities, both vertical and horizontal: the first one is the capability to leverage the team's strengths and to fill the gap in case of weaknesses, for instance by stimulating self-learning or by mixing senior and junior profiles. The second capability is about creating connections between the technical soul and the legal soul of the procurement team.

- By pursuing this two-dimensional approach in procurement practice, you are able to design and implement an effective and efficient change in your organization, because the team promptly match internal requirements with market offering. In our case, for instance, by introducing cutting edge cyber security solutions with the aim of implementing a stronger personal data protection in law enforcement information systems.

- We could suggest to pursue a transversal approach, building a procurement team with strong legal and technical skills.

- We strongly believe that for introducing innovation and facing societal challenges and needs it is not enough an innovative design, but you need also an innovative way to procure and implement that design, for instance by setting up a fair dialogue with suppliers.

Cyber Security Operations Center

SDAPA ICT procurement procedure

EUIPA 2021 winner – Procurement leadership category

Supplier perspective

Fabrizio Mancini
Dario Lauricella
Alfa Group S.p.A.

ABOUT US:

ALFAGROUP

WHO WE ARE

Since 1996, we have worked in the field of ICT services and solutions, accompanying organizations along the path to digital transformation and process automation, with an integrated methodology based on expertise and leading technologies in Digital Risk, Antifraud and Compliance.

FACTS & FIGURES

160+
EMPLOYEES

400+
ACTIVE CUSTOMERS

19M+
2020 TURNOVER

OUR OFFICES

LONDON

AMESFOORT (NL)

BOLOGNA

MILAN

P.S. GIORGIO

ROME

OFFERING AT-A-GLANCE

Cyber Risk Management for your company's digital transformation

We support organizations to implement **end-to-end governance of Digital Risk Management processes.**

Our approach combines consultancy, technology and software development, all on our **proprietary RHD platform** for **the integrated management of Cyber Risk** and the related **processes**.

CONSULTANCY

We DRIVE your potential

We **design** and **optimize** the following processes**:**

- Business Process Management
- Fraud Management
- Vulnerability & Cyber Threat Management
- Cyber Intelligence
- Data Analytics
- Cloud Center of Excellence

TECHNOLOGY

We EMPOWER your strength

We **choose** and **integrate** the best technologies in the following areas:

SOFTWARE FACTORY

We REALIZE your ambitions

Our **Software Factory** activities:

- RHD Platform Development & Evolution
- RHD Vertical Solutions Engineering
- Custom RHD Configurations
- Alfa Suite / Add-Ons Development
- Portals, E-commerce

PRODUCTS: The RHD Ecosystem

We develop and integrate solutions in the RHD family for the design, automation and management of Cyber Security, Anti-Fraud and Governance & Compliance processes.

ALFAGROUP

eafip

OUR CUSTOMERS

Alfa Group has built a solid and varied client base, thanks to its numerous years of experience, drive to explore new areas and face new challenges as well as the fact that its offering is constantly evolving to anticipate market needs. Alfa Group consults for some of the leading players in the international market across various industries, both from the private and public sector.

FINANCE

MANUFACTURING

AEROSPACE & DEFENCE

ENERGY & UTILITIES

TRANSPORTATION, RETAIL & DISTRIBUTION

TELCO

GOVERNMENT & PA

ALFAGROUP

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European Assistance For Innovation Procurement

OUR GOVERNMENT PROCUREMENT EXPERIENCE ITALIAN TERRITORY

EUROPEAN TENDER

- Consortium
- Subcontract

MEPA
(Mercato Elettronico Pubblica Amministrazione)

- European sub-threshold
- Tender by invitation
- Direct procurement

CONSIP FRAMEWORK AGREEMENT

- Subcontract

SDAPA
(Sistema dinamico Acquisizione Pubblica Amministrazione)

SDAPA

THE ALFA GROUP PERSPECTIVE

SDAPA makes it possible to award contracts of any economic value, even above the Community threshold

Institutions don't decide who to invite to tenders: each time an Institution runs a tender it automatically invites all the qualified Companies

Companies participating in the system are not chosen by Consip, but rather they are the ones who choose SDAPA and ask Consip to participate

The tenders are restricted procedure

SDAPA

For Alfa Group, a highly specialized Company that provides expertise and vertical technologies, participation via SDAPA meant being able to come into direct contact with the end customer to offer them services and solutions without the need for an intermediary contractor.

We were able to support a PA client in the same way as a private company

eafip
European Assistance For Innovation Procurement

SDAPA PROJECT - CYBER SECURITY OPERATION CENTER FOR CENTRAL DIRECTORATE OF CRIMINAL POLICE IN ROME, ITALY

Alfa Group was involved in the Cyber Security Operation Center Project for Central Directorate of Criminal Police by providing support and technologies for the Governance of Cyber Risk related to infrastructure vulnerabilities on CriminalPol Databases:

- Schengen Information System
- National DNA Database
- 112 Emergency Number
- Data Center

In order to manage their **Cyber Risk detection, mitigation and remediation**, CriminaPol had to select a supplier who, like Alfa Group, had **extensive expertise in vulnerability management**, thanks to projects throughout Europe, and was able to provide:

- **A Customer centric approach**

- **End-to-end solutions**

- **Innovation through R&D**

As a supplier, through the SDAPA platform, Alfa Group was able to directly support CriminalPol with the same successful approach which has led private Companies to continue to choose us year after year.

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European Assistance For Innovation Procurement

LESSONS LEARNED FOR THE FUTURE

A **short supply chain is beneficial not only for the supplier, but also for the PA Organization**, who is able to execute complex projects with very precise milestones quickly and efficiently.

An inclusive system such as SDAPA allows the PA customer to benefit from the **innovation, agility and high level of specialization** that SMEs bring to the table

Clients can take advantage of SDAPA to carry out **more ambitious end-to-end projects**

Alfa Group S.p.A.

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ROMA, MILANO,

BOLOGNA, PORTO SAN GIORGIO,

AMERSFOORT (NL), LONDRA (UK)

ALFAGROUP

Q&A

COFFEE BREAK

PART III

ARCHIVER
Archiving and preservation for research environments

European Open Science Cloud (EOSC)

Public buyer perspective

João Fernandes

CERN Senior Member of Staff - IT Department

ARCHIVER project coordinator

Outline

- CERN, Mission & Objectives
- Computing Challenges
- ARCHIVER Pre-Commercial procurement
- Lessons Learned & Conclusions

CERN

1954: 12 Member States

- International organisation close to Geneva, straddling Swiss-French border, founded 1954

- Facilities for fundamental research in particle physics

- 23 member states, 1.2B CHF budget

- ~3'200 staff, fellows, trainees, …

- >13'000 associates

Members: Austria, Belgium, Bulgaria, Czech republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom
Candidate for membership: Cyprus, Estonia, Slovenia
Associate members: Croatia, India, Lithuania, Pakistan, Turkey, Ukraine
Observers: EC, Japan, JINR, Russia, UNESCO, United States of America
Numerous **non-member states with collaboration agreements**
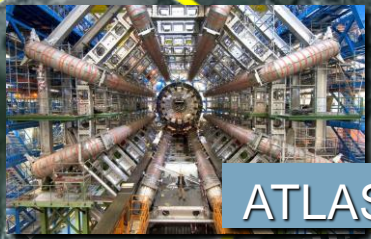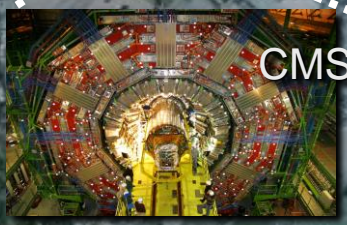
>2'500 staff members, 645 fellows, 21 trainees

7'000 member states, 1'800 USA, 900 Russia, 270 Japan, …

Computing Challenges

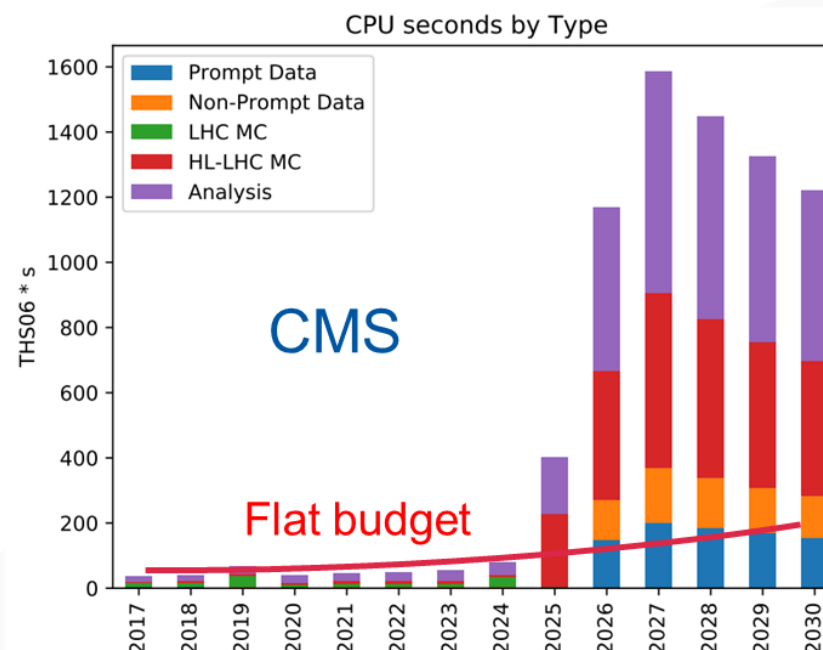
Data on disk by tier — CPU seconds by Type (CMS)

https://arxiv.org/pdf/1712.06982.pdf
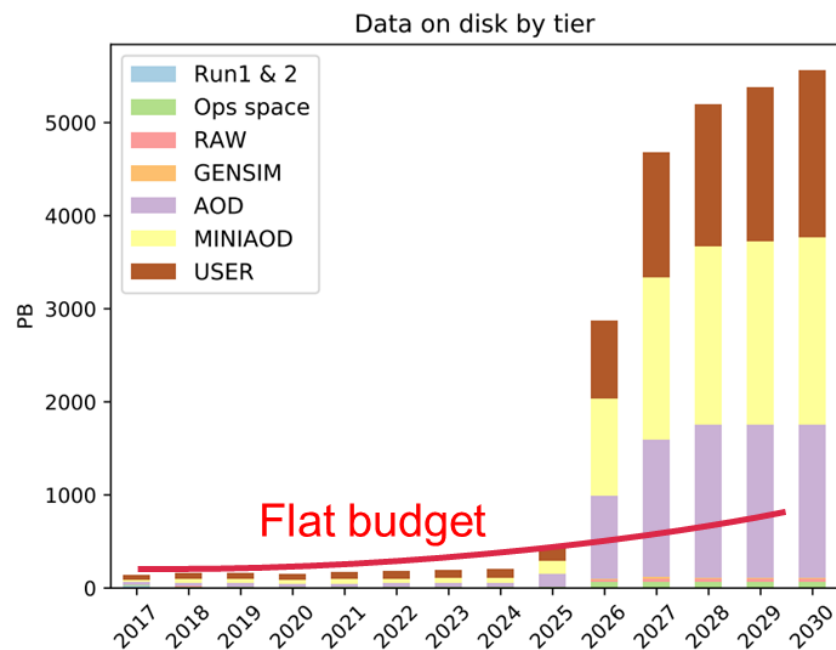
Raw data volume increases exponentially for processing and analysis

Technology improves every year, but estimate of needs are 10x above realistic expectation

CERN Pre-Commercial Procurements

- Procuring R&D of "close to market" innovative solutions
  - Ideal when a solution is promising but needs a competitive R&D "push" to scale out, to mature processes, etc., via an iterative/structured R&D testing/tuning across demand/supply sides
- CERN with significant accumulated experience in EC funded PCPs

Winner of the Procura+ awards 2019 "Outstanding Innovation in ICT Procurement"
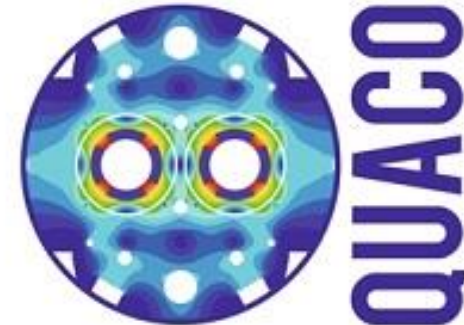
- Significant de-risking factor before investing significant procurement funds
- Possibility to procure pilot scale services at the end of the project

Project Objective

Focus: Archiving and Data Preservation Services using commercial cloud services via the European Open Science Cloud (EOSC)

Procurement R&D budget: 3.4M euro; Total Budget: 4.8M

Starting Date: 1st of January 2019

Duration: 42 Months

Coordinator: CERN (Lead Procurer)

Consortium

Includes Buyers and Experts in the preparation, execution and promotion of the procurement of R&D

The "Buyers Group": Public organisations committing funds to contribute to a joint-R&D-procurement, use cases in multiple research domains and R&D testing effort
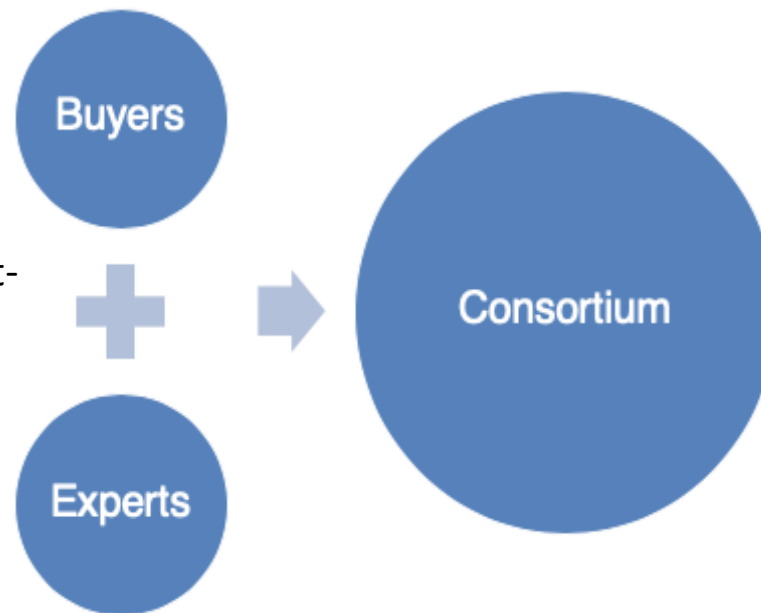
Experts – Partner organisations bringing expertise in requirement assessment and promotion activities, not part of the Buyers Group

Progress Beyond the state of the art

Scientific Data Repositories before ARCHIVER		ARCHIVER
Growing data volumes	→	PB scale demonstration of scientific data repositories
Basic bit preservation capabilities	→	European SaaS providers in digital preservation
Most of research data not published	→	Best practices: FAIR, TRUST, DPC RAM
Technology lock-ins concerns (tape), Business Continuity plans needed (COVID-19)	→	Promote open data, open standards, & demonstrate exit strategies
Fragmentation across scientific disciplines & countries	→	Pan-European: resulting services to be available in the EOSC portfolio
Cost underestimation at the planning phase	→	Cost-effective and *environmentally sustainable* model adapted to public research

ARCHIVER "current state of the art" report: https://doi.org/10.5281/zenodo.3618215

R&D Scope

Layer 4 Advanced services	High level services: visual representation of data (domain specific), reproducibility of scientific analyses, etc.
Layer 3 Baseline user services	User services: search, discover, share, indexing, data removal, etc. Access under Federated IAM
Layer 2 Preservation	OAIS conformant services: data readability formats, normalization, obsolesce monitoring, files fixity, authenticity checks, etc. ISO 14721/16363, 26324 and related standards
Layer 1 Storage/Basic Archiving/Secure backup	Data integrity/security; cloud/hybrid deployment Data volume in the PB range; high, sustained ingest data rates in Gb/s. ISO certification: 27000, 27040, 19086 and related standards. Archives connected to the GEANT network

EMBL

PIC port d'informació científica

CERN

DESY.

- EMBL 1 – FIRE
- EMBL 2 – Cloud Caching
- PIC 1 – Large File Storage
- PIC 2 – Mix File Storage
- PIC 3 – Data Distribution
- CERN 1 – The BaBar Experiment
- CERN 2 – CERN Open Data
- CERN 3 – CERN Digital Memory
- DESY 1 – Individual Scientist
- DESY 2 – Petra III Experiment
- DESY 3 – EUXFEL Experiment

Scientific use cases deployments documented at: https://www.archiver-project.eu/deployment-scenarios

ARCHIVER "current state of the art" report in the context of the EOSC: https://doi.org/10.5281/zenodo.3618215

Competitive Process

R&D Competitive Execution

Project Kick-off
Geneva
(07 Feb 2019)

Project extended by 6 months due to COVID-19 delays

2 consortia out of 3 selected

Project Ends
(30 June 2022)

Led by PIC

Led by EMBL-EBI

Led by DESY

Open Market Consultation

R&D Bids Evaluation & Selection

Design Phase 4 Months

Call Off

Prototype Phase 9 Months

Call Off

Pilot Phase 7 Months

January 2019 | January 2020 | 08 June 2020 | 09 Oct 2020 | 07 Dec 2020 | January 2021 | 28 August 2021 | 8 November 2021 | January 2022 | 31 May 2022

We are here

ARCHIVER R&D Tender in numbers

- Information sessions for companies: average of 80 participants

- Downloads of the PCP tender material before closure of submission period:
  - # Downloads: 147
  - # of different organisations / companies: 122
  - # of countries represented: 29

- # of organisations and companies involved in R&D bids: 43

Selected Designs: 5
Selected Prototypes: 3
Selected Pilots: 2

Pilot Phase Selected Consortia

Early Adopter Organisations

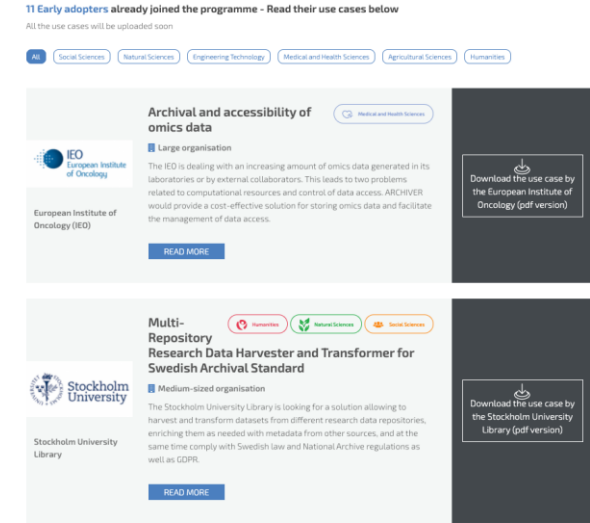*https://archiver-project.eu/early-adopters-programme*

- **Participants:**
  - 13 Demand side public sector organisations
- **Advantages**
  - Assess if resulting archiving and preservation services address their needs
  - Contribute and shape the R&D carried out in the project, contribute with use cases
  - Have the option to purchase pilot-scale services by the end of the project
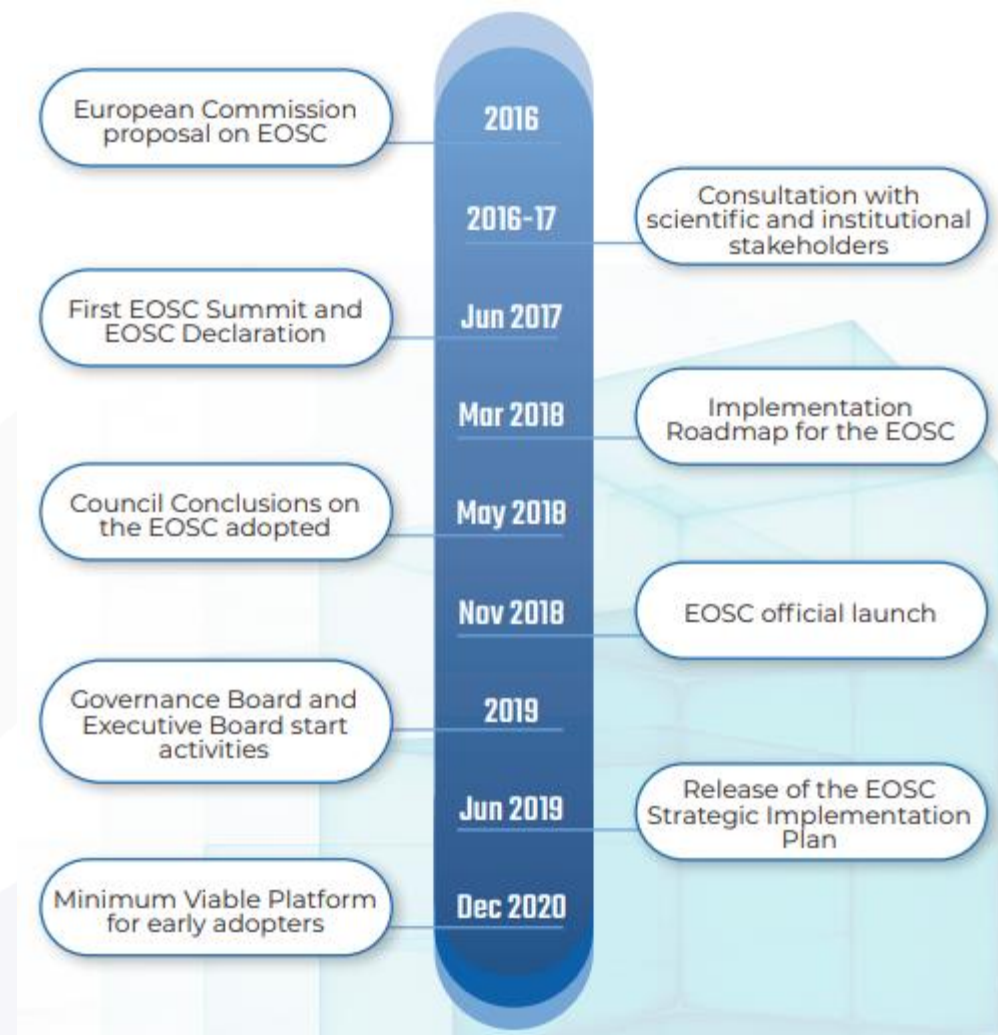
European Open Science Cloud (EOSC)

"We are creating a European Open Science Cloud now. It is a trusted space for researchers to store their data and to access data from researchers from all other disciplines. We will create a pool of interlinked information, a 'web of research data'. Every researcher will be able to better use not only their own data, but also those of others. They will thus come to new insights, new findings and new solutions."

Ursula von der Leyen,
European Commission President
World Economic Forum in Davos,
January 2020

Event	Date	Event
European Commission proposal on EOSC	2016	
	2016-17	Consultation with scientific and institutional stakeholders
First EOSC Summit and EOSC Declaration	Jun 2017	
	Mar 2018	Implementation Roadmap for the EOSC
Council Conclusions on the EOSC adopted	May 2018	
	Nov 2018	EOSC official launch
Governance Board and Executive Board start activities	2019	
	Jun 2019	Release of the EOSC Strategic Implementation Plan
Minimum Viable Platform for early adopters	Dec 2020	

What ARCHIVER (and other PCPs…) *is not*

- **Not** a zero cost research grant - based on a contractual relationship
  - Key to understand how to integrate the resulting services in scientific activities

- **Not** a one-off test
  - Verify quality of service for a real life scenario
  - Negotiated procedure: procure pilot services after project ends

- **Not** a "simple" technical evaluation
  - Data governance; Technical/Organisational measures blending applicable legislation
  - Cost modelling; adapted to public sector procurement cycles or research grants
  - Certification self-assessment; Best Practices

- **Not** a "walk in the park"
  - Significant and intense collaboration over 2.5 years of project execution: selection across R&D stages, scientific workload deployment, test of portability plans, etc.

ARCHIVER PCP: Lessons Learned

- A market readiness assessment is necessary to ensure all the support activities to bring a service to market are in place; Separate market assessment from R&D execution ensuring shorter PCPs seen as an advantage.

- Organise formal progress reviews as decision points, ensuring results are relevant for procurers; Reorientation of solutions are simpler to implement during the transition between phases that within a phase of execution.

- Ensure a regular rhythm of feedback and adjustment between Buyers and Contractors; If possible have one individual from the Buyers assigned to manage the agile process.

- A service conformance test framework executed by Contractors without external support simplifies the R&D process.

- For large-scale software, data flows need to be understood in advance to establish the full network connectivity requirements between Buyers and Contractors.

- Service exit strategies are essential and should be validated during R&D execution.

- Require Contractors to produce a roadmap shortly after the different phases start; Aligns expectations of Buyers / Contractors in terminology, development schedules, expected features and priorities setting.

Conclusions

- The ARCHIVER results will provide a set of **innovative digital repositories for the EOSC** that **keep intellectual control of data and associated products** for decades, making research outputs reusable

- ARCHIVER PCP is acting as a template to **commoditise** archiving and preservation at scale in research domains.

- The R&D challenge is well understood by the Contractors; key aspect to **substantially de-risk** a future commodity procurement for Buyers and Early Adopters organisations

- CERN, EMBL-EBI, DESY & PIC allocated significant effort **assessing and testing** the prototype/pilot platforms

- ARCHIVER PCP promotes a **sustainable mode**l for the resulting services beyond the project lifetime, promoting best practices and ensuring adequacy under European legislation
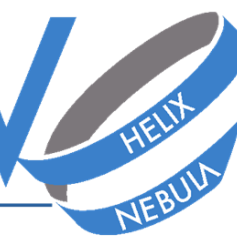
Thank you! Questions?

If interested in knowing more about ARCHIVER, please visit:

https://archiver-project.eu/

✉ *info@archiver-project.eu*

https://www.linkedin.com/company/archiver-project/

https://www.youtube.com/channel/UCCBIyLpUt-hWmQatqdlhIzw

ARCHIVER
Archiving and preservation for research environments

European Open Science Cloud (EOSC)

Supplier perspective

Tom Lynam
Marketing Director
Arkivum

About Arkivum

- Founded in 2011 out of the University of Southampton – initial focus on Higher Education Research Data

- VC backed and funded

- Headquartered in Reading, UK

- ~30 full time employees

- ISO 9001 and 27001 certified

- Full SaaS offering launched in 2017

- +70 customers as of 2021 across Higher Education, Heritage, Pharma and Life Sciences

The impact of ARCHIVER for Arkivum's business

- Identifying a market opportunity.

- Access to new markets.

- Grow relationship with partners such as Google.

- Subsidising internal R&D.

- Leverage marketing and PR.

- Interest from our investors.

- Recruitment.

- Positive impact on company morale.

Positive feedback specifically on the project and PCP process

- Level of feedback throughout the process and project.

- Engagement with the buyers group.

- Leveraging agile processes such as Scrum.

- Long-term development feedback.

Feedback on the procurement process

- Different funding structure would be beneficial to suppliers.

- Larger gap between project awarding and kick-off to improve supplier planning for resourcing and recruitment.

- Long-term commercial considerations baked into the project.

THANK YOU

Tom Lynam

Marketing Director

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EAFIP WORKSHOP-WEBINAR #4

INNOVATION PROCUREMENT: LESSONS LEARNED
FROM SUCCESSFUL PCP & PPI PROJECTS

LIBNOVA PERSPECTIVE as ARCHIVER SUPPLIER

2022-02-15

Agenda:

- Brief overview about LIBNOVA and LIBNOVA Consortium
- Brief overview about LABDRIVE
- Our experience with ARCHIVER PCP: Main contributions

About LIBNOVA

- One of the **major players** in digital preservation.
- Present in **18 countries**. Some of the largest and **most demanding** organizations worldwide are choosing LIBNOVA's solutions.
- Founded in 2009. **More modern** architecture. **Massively adopted** during the last 5 years.
- **Self-sustained** company, no risk capital, no debt. Resources in **product engineering/support**.
- Our position in the market is to be the **1st by innovation**.
- Research-active: **LIBNOVA Labs** (2017).
- Committed to the digital preservation community. Focused on providing the best **available technology and support** to the digital preservation community.
- 3 product lines: Shared preservation same engine - OAIS/ISO14721 - FAIR/TRUST Principles - ISO16363. On-prem or cloud.

LIBNOVA

CSIC (IFCA)

Universitat de Barcelona

Giaretta Associates

Voxility

Amazon Web Services (AWS)

Bidaidea

ARCHIVER PROJECT – LIBNOVA CONSORTIUM OBJECTIVES

The solution developed by LIBNOVA Consortium will provide a Research, Management and Preservation Platform to solve obstacles for research dataset management (including Preservation) identified at the beginning and throughout the ARCHIVER project.
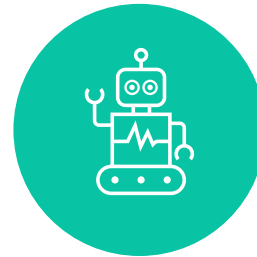
This project will help improving and completing LIBNOVA's basic research data preservation platform to address the specific needs of Research-centric organizations to the Petabyte Scale.

libnova

LABDRIVE Core capacities

Federated access

Share content securely across organizations

06

Automation with code

01

Drive your data with code. Adapt LABDRIVE to your datasets. Define your own workflows.

Smart reports

05

Get insights about your data. Detect PII or measure compliance.

Virtualized storage

02

Abstract data from infrastructure, working with cloud or on-prem storage, multiple replicas and integrity checks.

LABDRIVE

Multi-protocol file sharing

04

No matter how is it stored, access your data with the tools you use in addition to a powerful web interface.

Metadata and discovery

03

Define templates, import and export, query and browse rich metadata schemas.

libnava

Our experience with PCP:
How ARCHIVER Project is benefiting LIBNOVA?

Market

Product

Team
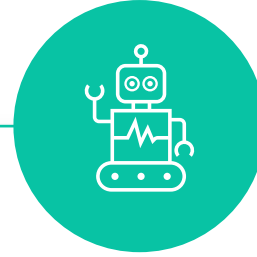
How ARCHIVER Project is benefiting LIBNOVA?

Market

Time to market:
Shorter development lifecycle leading to a faster time to market (5 to 2 years)
+ Consortium's Relationships

Market visibility:
Several EU/USA Universities and a large European pharmaceutical signing contracts.

Product

Accelerated innovation:
Being able to work with the 4 buyers maximizes success chances in first iteration.

Standards:
We are bringing several – previously unknown – standards onboard.
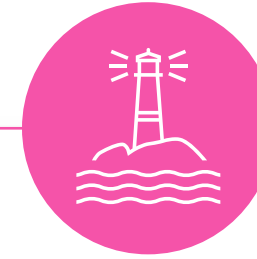
Team

EUnthusiasm:
LIBNOVA consortium's team feels enthusiastic about being part of something larger, relevant to the EU. The EU is leading the R&D in this field.

Happiness:
Everyone have been working really hard, but really happy about it!

libnova

How are we are benefiting the community?

Making the practice more efficient

- Direct: Optimized storage costs, low operational costs.
- Indirect: Less time/resources for producers/researchers to use it.

Making it available to a broader audience

- Demystifies preservation. Easy to understand and to use.
- Opens the practice to large volume datasets and to more advanced organizations.

Making it easier to apply best practices

- Fully conformant to ISO 14721 and ISO 16363 (and several other standards)
- Full support for FAIR/TRUST data models, workflows, etc.

How are we are benefiting the community?

Reducing the environmental impact of the community preservation activities

- Reuse what you have: on-premise deployments using existing infrastructure are possible.
- Consume only when needed: Resources are consumed when there is something to do. Scaling from 36 Kubernetes pods to ~5000 in 32 minutes. Process the workload and then back to 36 pods.
- "Environment impact" topic is included in every architecture specification/analysis. The team is proud of many small and smart optimizations. For example, the hashing algorithm.
- Using carbon-neutral providers and datacentres.

Contributing to the European digital sovereignty and digital development and leadership

- Cloud provider independence.
- Decouples content from providers.
- Open to the emergence of EU-based cloud providers.

Thanks!

We are open to participate in R&D projects helping the consortium to ensure appropriate data management by using LABDRIVE.

Teo Redondo
CRO of LIBNOVA
teo.redondo@libnova.com

Q&A

Takeaways

Takeaways

- Pre-Commercial Procurement (PCP) helps shorten the development lifecycle leading to a **faster time to market.**

- Companies participating in PCP obtain **market visibility.**

- Working with several buyers **maximizes the success** chances.

- R&D efforts may lead to generating previously **unknown standards**.

- Innovation Procurement can contribute to **EU digital autonomy.**

- For introducing innovation and facing societal challenges and needs it is not enough an innovative design, but you need also **an innovative way to procure and implement that design, for instance by setting up a fair dialogue with suppliers.**

Wrap up & Closure

Future events

TOPIC	DATE
Innovation Procurement: Commercialisation of innovations to overcome the valley of death	12th May 2022
Evaluation and testing: tools and methodologies	14th July 2022
Climate change: procure greener	15th September 2022
Introduction to Innovation Procurement	27th October 2022
Automation of public services & Robotics: how public authorities can deal with it	15th December 2022
Construction, infrastructure & energy innovations in ICT related projects	16th February 2023

More information on: www.eafip.eu/events/webinars/upcoming-webinars/

1st CALL OF 2022 IS OPEN NOW!

Apply for free assistance
Deadline 15 April 2022

https://ec.europa.eu/eusurvey/runner/EAFIP2022

Thank you for your attention

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For any questions regarding EAFIP-Assistance and/or applying for free assistance, please contact:

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www.eafip.eu

EAFIP WORKSHOP-WEBINAR #4

INNOVATION PROCUREMENT: LESSONS LEARNED FROM SUCCESSFUL PCP & PPI PROJECTS

15 February 2022

Q&A

Part I GKW - Gegevens Knooppunt Waterschappen

Speakers: Sanne Wijnhorst (HWH)

	Question	Answer
1.	**Based on which European regulation were you mandated to share data?**	The INSPIRE Directive and its Dutch transposition. HWH started designing a full architecture that complied with the European regulations and the Dutch law.
2.	**How does HWH share the data gathered?**	In a public website in which several Dutch public entities share their public data. HWH shares information there as well.
		Additionally, HWH is also looking to share information with other end-users, such other public entities, not just citizens.
3.	**From a procurement perspective, what procedures did HWH used for the project? Pre-Commercial Procurement? Innovation Partnership?**	Regular procedures were used. An open procedure was implemented. Nevertheless, sufficient flexibility and participation from the market parties was ensured.
4.	**Does HWH foresee room for flexibility in the execution of the contract? What about Venture Capital to increase this needed flexibility?**	Flexibility is one of the goals to be achieved. Nevertheless, no VC schemes are included in the contract. This could be something for the future.
5.	**Do you work with one or several suppliers for the data solutions? Dutch or foreigner?**	Only with one Dutch provider.
6.	**Which language did HWH use for the procurement?**	The Dutch language was used. This has a clear effect on the participating companies. As it limits the participation of foreign companies. In certain projects, where HWH wants to address the international market, HWH uses English. However, in this project HWH wanted to do business with a party nearby.
7.	**What about the potential confidential nature of the project? And the security issues? And Data security?**	The project deals with Open data, however confidentiality issues and data security are always taken into account as mandated by national law transposing EU legislation.
8.	**How does the solution work?**	The solution has two interfaces, one for consumers and one for data consumers. A lot of time is invested to make the solution work and a lot of interaction between the water boards and HWH and with the technology vendor is needed as well.
9.	**How did HWH manage the IPRs of the solution and of the data in this project?**	HWH always considers IPR in relation to the particular procurement procedure. HWH uses two strategies:
		1. Own IPR

		2. Ask for a license for unlimited use.
		When it comes to software development, these are the main two strategies.
		Nevertheless, when it comes to data it is important to analyse the source of the data. If it comes from sensors, it should be open by nature (also according to the Open Data Directive in which the rule is that the data is open unless an exception applies).
		This is exactly what this new project from HWH tackles: the challenges presented by the Open Data Directive, how to share data with governmental entities and with private companies.
		It is important to note that data is owned by the Waterboards, although it is made publicly available.
10.	**Is Data published based on open licenses?**	Not yet. For now, HWH is just delivering this information to the central government website. This might happen in the upcoming years.
11.	**Is HWH already thinking to launch new Innovation procurement projects?**	Yes, but HWH is still looking for an appropriate project.
12.	**HWH owns the data (IPRs of data) and then shares following the mandate of the Open Data Directive. Does HWH use any particular disclaimer when sharing in the public web above mentioned?** **Does HWH have any recommendations in this regard for other entities dealing with open data?**	Unfortunately, it is too soon to answer.
13.	**Can you explain the initial barriers of the procurement of innovation and evolving into what the final organization mindset regarding the procurement? Besides the more flexibility in the need, what would have been useful to know at first to visualize the journey?**	The priority is having a clear business case to tackle the solution.

Part II Cyber Security Operations Center: SDAPA ICT procurement procedure

EUIPA 2021 winner – Procurement leadership category

Speakers: Francesco Talone, Stefano Moni, Giuseppe Restivo (STATE POLICE) Fabrizio Mazini, Dario Lauricella (ALFA GROUP)

	Question	Answer
14.	What kind of technology/product/service off-the-shelf was addressed using the Framework Agreement (FA) instrument and what by the Dynamic Acquisition System (DSA)? Why a different strategy (70% of budget spent with FA and 25% spent with DAS) and not for example use DAS to procure everything?	The main difference was the "end users" of each approach: Framework agreements are targeting big companies while DPS are more focussed on SMEs.
15.	Can you elaborate on the project? What about the structure in lots of the tender? Is this linked to the type of products/services (CPV codes)?	The platform is developed and owned by CONSIP, so that other public entities can launch procurement procedures, from very simplistic tenders, to very complex procedures. The project was divided in 5 lots because after the preparatory stage, this structure was deemed the best to attract more technology vendors, in particular SMEs. It is also linked to the CPV codes. Different lots give the possibility to leverage the different capabilities.
16.	How did the CENTRAL DIRECTORATE CRIMINAL POLICE tackle the difficulty of awarding/managing lots?	When designing the procurement strategy, the contracts were also designed in a very similar way to facilitate management. It is key to have a good contract design. Is about a procurement strategy but also a contracting strategy
17.	Is the platform only available in Italian?	The platform is also available in English and developed and owned by CONSIP. In this way, big public entities, as well as local (Italian) public administration can make use of it.
18.	Was the Procurement Project favouring SMEs?	The criteria were aligned with the market, to ensure that the procedure was not deserted. That there were sufficient offers to ensure competition and the best possible solutions. Thanks to the market analysis it was possible to understand what the market can offer. When you conduct properly this phase then it is easier to set standards for good offers.
19.	Now that the contract with the Cybercenter is concluded? Does this act	Yes, Italian entities can use the reference data without the need of authorisation. All the government contracts can be

		used as reference as the experience can be replicated in other countries
20.	**Since ALPHA already has business not only in Italy, but also in the UK and the Netherlands, are there any differences in the behaviours towards SMEs in the different countries?**	The European rules are similar, but different countries have different laws. For example, in Italy there is a big administrative burden. In other countries information is centralised and there is no need to provide documents more than once.
21.	**Is there a risk that public buyers award contracts based on the lowest price only?**	The risk exists. But still, in many tenders price quality ratio is the preferred approach.
22.	**Is this the first time that ALPHA submitted a Tender for Public Procurement procedure? What sort of barriers/issues have you encountered?**	No. But it is the first time ALPHA used the TAPA platform. They normally use the MEPA platform which is smaller. It is a very straightforward platform, which works very well and consequently, all the steps were easy to follow. After being awarded the contract, the difficulty was to sign the contract, but it had to do with the COVID pandemic and not with the procedure *per se*.
23.	**Does ALPHA have recommendations for other technology providers?**	Yes: to register and bring new ideas to the table, bring your knowledge and inform the public buyers on the novelties. Teach them how to accomplish their goals.

Part III ARCHIVER Project

Speakers: João Fernandes (CERN), Tom Lynam (AKRIVUM), Teo Redondo (LIBNOVA)

	Question	Answer
24.	**There are different (competing) cloud technologies (e.g., amazon, google cloud). Are these type of big companies supporting the goal of the Archive project?**	In Archive there was a significant scalability requirement and that is why the group of buyers is committed to use one of these existing cloud services, as long as no vendor lock in situation arises. These cloud services are also asked to allow the participation of SMEs that are not interconnected.
25.	**Is the interaction/participation with these big companies that provide cloud services positive for SMEs?**	AKRIVUM states that for a cloud agnostic company, the interaction is interesting and allows them to learn. Nevertheless, it is still difficult to assess whether the services from a cloud agnostic company fits these sort of markets. LIBNOVA clarifies that there are benefits in cloud deployment, benefits in on premise deployment, as well as benefits in a combined deployment. In the end it all depends on what the customer requests.
26.	**The participating companies have engaged in standardisation, but does the development of the technology support the patenting strategies of the participating companies?**	For AKRIVUM, it definitely has. For LIBNOVA, it has also fostered participation in open source experiences. The answer is not yet clear, since this is a research project, nevertheless the Intellectual Property is something LIBNOVA is carefully considering, in the upcoming months.