

Pre-Commercial Procurement of Innovative Triage Management Systems Strengthening Resilience and Interoperability of Emergency Medical Services



# Open Market Consultation ITALIA

#### 10 Marzo 2022 ore 11:00 – 13:00 CET









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pcp.iprocuresecurity.eu

## INFO PER PARTECIPARE





This session will be entirely recorded and published on the iProcureSecurity PCP website.



All participants except speakers and moderators will be **muted by default**.



Feel free to post your questions in the **chat**.



If you would like to speak, raise your hand and wait for the moderator to give you the floor.

## Objectives

Introduce the iProcureSecurity PCP project and the Call for Tenders

Explain the Pre-Commercial Procurement (PCP) mechanism

Consult with potential suppliers the draft specifications

Facilitate the establishment of partnerships

# Presenters

### iProcure Security **PCP**



#### Piero Maria Brambilla

Senior Consultant AREU, Lombardia



#### Andrea Comelli

Direttore "ad interim" SSD Maxiemergenza AREU, Lombardia



Andrea Pagliosa

IT & BI Specialist AREU, Lombardia



Alberto Lombardi DPO - Clinical Eng. ASL Benevento



**Nadia Sgro** Project Manager ASL Benevento



1. WELCOME & INTRODUCTION	11:00-11:30
2. MAIN CHALLENGES & SCOPE	11:30-12:00
3. PRE-COMMERCIAL PROCUREMENT AS A TOOL FOR INNOVATION PROCUREMENT	12:00-12:20
4. IPROCURESECURITY PCP PHASES & TENDER PROCESS	12:20-12:30
5. NEXT STEPS	12:30-12:40
6. QUESTIONS	12:40-13:00

## **WELCOME & INTRODUCTION**



## Piero Maria Brambilla

Senior Consultant



## iProcure Security № PCP Current issues with triage management



#### Planning and decision making

- Lack of clarity for the head of operations on the ground and for command and control structures and dispatch centres
- Missing information on environmental conditions (traffic conditions and weather conditions)
- No data for decision support to improve resource allocation and casualty transport



#### **Resource allocation**

- Resource allocation is sometimes inefficient due to missing interoperability of used systems
- An exhaustive analysis of the data generated in the incident is required, both in real time and afterwards
- Automated monitoring of already assessed casualties can free up human resources to care for other casualties.



#### Triage practice

- Current triage is not very flexible
- Improvement of re-triage, i.e. monitoring of the condition and vital signs of already triaged casualties



#### **Data transmission**

• Radio messages are prone to confusion and slow

#### Interoperability

- Missing interoperability (missing APIs) between applied EMS systems
- Missing interoperability between all the actors participating in the emergency
- O Missing interoperability with national Electronic Health Record

## iProcureSecurity<sup>®</sup> PCP Importance of triage management





#### What

- Sorting of casualties into priority groups according to their needs and the available resources.
- Ensure the efficient use of available resources (e.g. personnel, supplies, equipment, transportation, medical facilities).



#### Why

- Low probability but high impact of events
- Affects the extent and quality of care delivered by the EMS system.
- Reduced mortality and increases quality of life of casualties.



#### Trend

- Number of natural and man-made disasters increase
- Risk drivers: climate change, urbanisation, changing security landscape, technological developments

**L'obiettivo principale di** iProcureSecurity PCP è quello di migliorare il soccorso nelle maxi-emergenze attraverso un sistema flessibile di gestione del triage. La UE ha reso disponibili 6,7 milioni di euro per i servizi di R&S in questo settore







KENTRO MELETON ASFALEIAS (KEMEA) – GREECE \*

iProcure Security PCP







SERVICIO MADRILENO DE SALUD (SERMAS) - SPAIN



OSTERREICHISCHES ROTES KREUZ (ARC) - AUSTRIA



AGENZIA REGIONALE EMERGENZA URGENZA (AREU) - ITALY



AZIENDA SANITARIA LOCALE BENEVENTO (ASLBN) - ITALY



ELLINIKOS ERYTHROS STAVROS (HRC) - GREECE



ETHINKO KENTRO AMESIS VOITHEIAS (EKAB) - GREECE



IZMIR BUYUKSEHIR BELEDIYESI (IBB) - TURKEY



\* Project coordinator



iProcure Security **PCP** 

SYNYO GmbH – AUSTRIA \*



SYNYO

ACIL AFET AMBULANS HEKIMLERI DERNEGI (AAHD) - TURKEY

empirica Empirica technology research (Empirica) - Germany



Complemented by an Advisory Board of international EMS experts and the wider iProcureSecurity <u>EMS Network</u>

## Process



**Pre-Commercial Procurement of R&D services** 



Phased approach, moving from design, through prototyping and testing



Competitive process – several contractors active in any given phase



Avoids lock-in – at least two solutions fully tested in the last phase

## **ABOUT AREU**





## Piero Maria Brambilla

Senior Consultant



## **AREU** - Agenzia Regionale Emergenza Urgenza

Instituted on April 2<sup>nd</sup> 2008 by the Government of Lombardy with the deliberation 6994/2008

AREU is 100% owned and financed by the Government of Lombardy





#### **Focus**

### Ensure consistent and effective





## for a population of 10 Millions

### **Motivation**

- The real motivation for seeking innovation in the area of triage is driven by the need to move from a paper-only solution to a more efficient digital solution integrated with our emergency management system used both in C&CC and in the field.
   The lack of a digital triage solution is a significant limitation in terms of efficiency and effectiveness.
- The most relevant results of the project will be the existence of at least one new and updated digital triage system.
- This will give AREU a real chance to improve its operational capacity during major emergency events.



### **Similar projects**

- The HeERO projects (Harmonised eCall European pilot) funded by EU Commission under the ICT PSP program. It addresses the pan-European in-vehicle emergency call service "eCall" based on 112, the common European Emergency number.
- The NEXES project (Next generation Emergency Services) funded by EU Commission under the Research and Innovation Action, aims to research, test and validate the promising integration of IP-based communication technologies and interoperability into the next generation emergency services, so that they attain increased effectiveness and performance.
- **EUOL** (Emergency-Urgency On Line) system in Lombardy Region: real time information system among hospitals and EMS dispatch centers on the availability of "critical" resources: emergency departments, ICUs, operating rooms, cath-labs and interventional radiology, other diagnostics.
- HELP 112, funded by EU Commission, is the pilot project on the design, implementation and execution of the transfer of GNSS data during a 112 call to a PSAP.
- Smart Healthcare for a Smart City Experience with Vodafone 5G network dedicated to e-health, concerning the design and implementation of smart ambulances and emergency vehicles.
- Valkyries Harmonization and Pre-Standardization of Equipment, Training and Tactical Coordinated procedures for First Aid Vehicles deployment on European multi-victim Disasters









### **Participating staff members**

Piero Maria Brambilla	<ul> <li>Senior Consultant &amp; Advisor</li> <li>Former AREU CIO &amp; CTO</li> </ul>
Andrea Comelli	<ul> <li>Ad Interim Director of AREU Maxi-emergency Department</li> <li>Medical Referent of Lombardy USAR Team</li> </ul>
Gabriele Dassi	AREU CIO & CTO     System Architect
Alessandro Gervasi	AREU Procurement Department Manager
Andrea Pagliosa	<ul> <li>AREU BI Coordinator</li> <li>Expert in EMS Process Management</li> </ul>
Eleonora Zucchinali	AREU Procurement Department Director

## **ABOUT ASL Benevento**





## Nadia Sgro

#### Project Manager

#### ASL Benevento



## **About ASL Benevento**

**Azienda Sanitaria Locale Benevento (ASL BN)** is one of the 7 Local Health Agencies of the Campania Region. It is a public entity with managerial, technical and financial autonomy. ASL BN manage the health issues at local level and carries out the tasks of the national health system in the geographical area of the Benevento Province.

ASL BN is characterized by:

- an area of 2000 sq km
- a population of about 300.000 inhabitants
- -78 municipalities

ASL BN is organized in:

- n.5 Healthcare Districts
- n.3 multifunctional Health Departments, including Prevention and Mental Health Departments.
- **Emergency Medical Service of Benevento Province** (Operational Center of Regional Emergency Health Service)





#### **Emergency Medical Service - ASL BN**

•The ASL BN coordinates the Operational Center of the Benevento Province through a coordinated emergency health system.

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•The service is active 24 hours a day and the emergency calls are answered by a specially trained health worker directs the ambulance operators to the emergency services in the province. To allow immediate intervention, constant mapping and knowledge of the available beds in the Province Hospital, as well as constant connection with the entire regional network.

•ASL Benevento has a helipad enabled for night landing located near the Benevento Hospital, to allow disadvantaged areas to be able to benefit from adequate emergency assistance in a short time.

•In addition to hospitals, EMS in Benevento also relies on the provincial network of 11 emergency units located in the Benevento Province

### **iPS Project – ASLBN TEAM**



Health Management Engineer







### **ASL BN Projects - 2020/2021**

#### iProcure Security PCP



### **iPS Project Outcomes – ASLBN** Challenges

ASL BN participates in the iPS project with the full support of the Emergency Medical Services of Campania Region and the Health Agency's General Management.

The objective of ASL BN is to improve the quality of life of the patients, preventing diseases and managing emergencies with a multidimensional approach throught digital disruptive innovation solutions.

ASL BN Challenges:

- provide its patients with innovative digital solutions for the prevention and complete management of emergency services and therapeutic diagnostic path, aimed at encouraging independent living, well-being and supporting the transition to integrated care.
- -improve and manage a smart and integrated emergency health management system
- develop preventive heath models, which increase the effectiveness and efficiency of health and emergency services, reducing social and economic costs.

#### **Innovation Process**



contributing to new organizational forms



## **MAIN CHALLENGES & SCOPE**



### Andrea Comelli

Direttore "ad interim" SSD Maxiemergenza



## Motivation



#### **Common needs**

- Quick assessment of the situation on site (e.g. number, location, status of casualties)
- $\circ$   $\;$  Better and quicker planning onsite  $\;$
- Reducing reaction time to changing situations
- Availability of data that help to make better informed decisions
- More reliable tagging of casualties
- o Better interoperability with all relevant agencies in onsite/at disaster area
- o Better distribution of resources at the scene
- Increase in rapid transportation of casualties (According to their status)
- Right distribution of casualties to avoid overcrowded hospitals



#### Innovative EMS approaches should:

- make the EMS system interoperable and travel with the casualty
- o make the status very visible in all situations and weather conditions (night, smoke, etc.)
- allow data transfer to EMS decision makers onsite and enable hem to distribute resources and organise rapid transportation of casualties
- $\circ$  save data for analysis
- help during the handover process from outside to inside hospital
- o allow overseeing the situation (number of casualties, location and status)

### Focus on complete on-site management

... with links to further communication (e.g. EMCC) and health and care interfaces (e.g. data from triage passed on to the treatment centre / hospital)

### ICT-enabled support

Solutions are expected to provide the necessary devices that work together to manage the triage process (e.g. triage tags, mobile devices)



#### Quick and accurate overview of casualties and their status

- Distinguish different roles in the system, such as casualties, different types of EMS practitioners
- Display casualties at a glance as they are being registered, their status and triage steps they are in, geolocation, etc.

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- Allow for identifying the casualties , e.g. by scanning their ID cards, adding a photo taken by the EMS practitioner, possibly access to the casualty's medical record/HER
- Provide an innovative device (tag) that can be attached to the casualty easily in different conditions and displaying information such as status, ID, as well as collecting information (e.g. vital signs, status changes) which can be viewed via appropriate interfaces by the EMS team. Further innovative elements are desirable, such as voice recognition. Some information should be visible directly on the device (e.g. circulation, breathing, disability, child/adult, stabilisation actions, exposure, bleeding/fractures/injuries, CBRN, airway, injury location, pregnancy), other information may be visible only through a connection to another interface such as a tablet.

## Decision support for better allocation of available resources and quicker support for casualties

- Allowing to quickly add new users to the system when dealing with a specific MCI, assigning roles to them and allowing them to set preferences in the system (e.g. language)
- A comprehensive way of displaying the whole picture, including mapping of the MCI area and ability to add / chart elements, resources (e.g. triage stations, vehicles area, etc.) on a shared map, displaying an overview of the casualties as they are being registered in the system by on-the-ground staff, overview of checklists of important actions to take into account for the EMS onsite staff
- Provide complementary information such as weather conditions, traffic conditions, surroundings
- Provide decision support based on the available data entered into the system, which supports decisions such as which hospital to select for different casualties based on available infrastructure (e.g. ICU beds) and specialisation (e.g. burns)of the hospitals nearby, required types of transportation (land/air) and number of transport vehicles, number and type of personnel, required logistic resources (supplies), etc.
- Support staff management, such as staff location and types, check-in and check-out, staff progress (e.g. view of main completed tasks or checklists completed), easily communicate to the staff through the system, e.g. by sending a reminder to staff for a specific action regarding a specific casualty

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#### Improved coordination and communication among the different EMS actors

- Keep track of all actions a unique record of a casualty's journey
- Share live information about red / danger zones
- Store and exchange images (e.g. with EMCC)
- Ensure messages are stored in case of blocked communication and are labelled clearly if they are outdated (e.g. due to missing network connection)



#### Reduced handover times between ambulance transport and hospitals

- Display available infrastructure of hospitals nearby, their specialisation and capacity
- Alert hospitals of upcoming casualties in need of treatment
- Enable sending of relevant information (incl. clinical data) to those hospitals

### iProcure Security 🍄 PCP



#### Insights for quality assurance and training measures

- Providing information necessary to evaluate the event ex-post (e.g. number of casualties and their status, number of vehicles and other resources used, number of EMS staff involved, used equipment, reaction times between reported actions logged in the system, collaboration with local hospitals, internal and external communication, etc.)
- Offering real data from past MCI events for simulation purposes and augmented reality enabled training

#### Interoperability with existing systems

- Use of a harmonised terminology
- Connection with existing APIs and systems of the procurers (detailed in the tender documents)
- Enable sharing of data with other first respondents like police and rescue (to be defined in the tender documents)
- Sharing of clinical data collected onsite hospitals (EHRs)

### iProcure Security 🍄 PCP

#### **Operational – during the PCP**

- Provide the solution in all languages of the procurers English, Spanish, German, Italian, Greek, Turkish
- **Develop prototypes** in two iterations (phase II) and test them with end users (n = 10 per pilot)
- Fully develop the systems and test them extensively with end users (e.g. as part of national or international simulation events to be agreed with the procurers in phase III)
- Ensure all equipment necessary for the solution to work (e.g. mobile devices, tags) is made available during the simulation events (plan for at least 10 end users per pilot)
- Collect data in collaboration with the procurers to evaluate the solution's effectiveness



Other – related to privacy, security, connectivity, usability, performance







## PCP AS A TOOL FOR INNOVATION PROCUREMENT



## Alberto Lombardi

Data Protection Officer

Clinical Engineering Unit Manager

**ASL Benevento** 



## WHAT AND WHY?

### iProcure Security **PCP**





Innovation Technology cannot be separated from the organization or from its users, but co-evolves with them, contributing to new organizational forms

# WHAT AND WHY?

- Pre-Commercial Procurement (PCP) is the procurement of R&D services to develop pioneering innovative solutions, before they are commercially available
- Public Procurement of Innovative solutions (PPI) happens when the public sector uses its purchasing power to act as early adopter of innovative solutions which are not yet available on large scale commercial basis
- Society faces important challenges: Health care, Climate Change, Energy Efficiency, Transport, Security...

# WHAT AND WHY?


# HOW?



#### A Win-Win for everyone!

#### **Benefits for taxpayers**

- Access to better public services;
- More innovative and globally competitive society;

- Attractive for foreign investment;
- Increased employment demand.

#### **Benefits for procurers**

- Solutions steered to public sector needs;
- Increase quality of services;
- Knowledge about pros/cons of alternative solutions;
- Procurers get to **select the best option**.

#### **Benefits for suppliers**

- Opportunities to gain leadership in a sector or to enter new markets;
- Retention of IPR ownership;
- Testing under real world conditions;
- Shortening time-to-market for innovative products/services.

# **IPROCURESECURITY PCP PHASES** & TENDER PROCESS



## Alberto Lombardi

Data Protection Officer Clinical Engineering Unit Manager

Nadia Sgro Project Manager

**ASL Benevento** 







# **PHASE I**

Concept design, solution architecture and technical specifications based on procurers' requirements, use cases and process models

- 6 suppliers expected to be awarded
- Expected output:
  - Detailed report describing the solution and a detailed plan for the prototyping and testing activities in Phases II & III.

#### • 4 months

- Maximum phase total budget: €840,000 (max. €140,000 per contractor)
  - The offers are ranked according to quality price ratio
  - Contracts are awarded until the remaining budget for that phase is insufficient to contract the next best tender



# **PHASE II**

Development of prototype systems in two iterations

- 4 suppliers expected to be awarded
- Expected output:
  - Prototype specification (v1)
  - Prototype demonstration (v2)
  - Plan for development of a limited volume of solutions for field-testing
  - Updated cost/benefits forecast including a preliminary business plan

#### • 8 months

- Maximum phase total budget: €2,940,000 (max. €735,000 per contractor)
  - The offers are ranked according to quality price ratio
  - Contracts are awarded until the remaining budget for that phase is insufficient to contract the next best tender

# PCP Phase III **Testing Pilot Systems** Supplier A Supplier D 2 Suppliers 8 Months Development and testing of pilot systems

# **PHASE III**

Final development and testing of a limited volume of services in real world conditions

- 2 suppliers expected to be awarded
- Expected output:
  - Implementation in 5 testing sites
  - Overall assessment and success verification
  - Updated cost/benefits forecast, including a preliminary business plan

#### • 8 months

- Maximum phase total budget: €4,620,000 (max. €2,310,000 per contractor)
  - The offers are ranked according to quality price ratio
  - Contracts are awarded until the remaining budget for that phase is insufficient to contract the next best tender

## **SUBMISSION** OF TENDRES



ELECTRONIC SUBMISSION (VIA DEDICATED PORTAL)	DIFFERENT SECTIONS (ADMINISTRATIVE, TECHNICAL FINANCIAL)
5 MONTHS	ENGLISH
TO SUBMIT OFFERS	AS THE OFFICIAL
(TBC)	LANGUAGE

# ELIGIBILITY & EVALUATION CRITERIA





#### Open to all types of operators

(companies or other type of legal entities) regardless of their size or governance structure



#### Single and joint tenders



#### OMC participation voluntary

It is not a prerequisite for participating in the Call for Tenders.



# Exclusion, selection and compliance criteria

The criteria are still being developed.



#### Focus on quality

The price-quality ration will favour the quality criteria.

# Quality / price ratio example



Ranked tenders are funded until the phase budget is insufficient to fund the next best tender.

# **Contract, monitoring and payments**

#### CONTRACTING

Framework agreement with specific contracts in each phase.

#### MONITORING

During each phase, contract implementation will be **monitored periodically and reviewed against the expected outcomes** (milestones, deliverables and output or results) for the phases.

#### COMPLETION CRITERIA

#### **Satisfactory completion**

of milestones and deliverables: Requirement for payment

#### Successful completion:

Prerequisite for passing from one phase to the next.

# INTELLECTUAL PROPERTY RIGHTS

#### SUPPLIERS KEEP OWNERSHIP OF THE INTELLECTUAL PROPERTY RIGHTS

attached to the results generated during the PCP implementation.

#### A FINANCIAL COMPENSATION

is to be calculated in the financial section of the tender. The **actual price** is the price quoted by the supplier. The **market price** is the price that the supplier would have quoted.



- The procurement budget is **centralised** with the Lead Procurer (KEMEA) with headquarters in Greece. KEMEA is entitled to a deduction for input VAT. For suppliers from Greece (in the case of joint consortia, the consortium coordinator' headquarters are of relevance) national VAT procedures apply.
- **Suppliers from EU member states**: Invoicing without VAT using the reverse charge procedure. KEMEA's full data and VAT number must be included. Suppliers VAT number must appear.
- **Suppliers from third countries**: VAT is calculated and reported by KEMEA. If the supplier upon import is obliged to report VAT according to the rules of the home country and the invoice contains VAT, that VAT is non-deductible in Greece. Instead, VAT amount is to be considered as a cost of the service.
- Tenderers to calculate if their net amount + VAT is still under or equal to the ceiling amount, and not higher. Example: Budget procured 124k, suppliers VAT 24 %, max. value of the service without VAT is 100k.



### **NEXT STEPS**



### Andrea Pagliosa

#### IT & BI Specialist



# WHY AN OPEN MARKET CONSULTATION?

The OMC aims to bring the market perspective to a procurement process It helps the procurers to prepare an effective pro-innovatio n tendering approach It enables the suppliers to work in advance and prepare competitive offers.

Participation in the Open Market Consultation is not a prerequisite for participating in the Call for Tenders.

# **OMC** activities





#### Local Events

Each iProcureSecurity PCP procurer offers an event, preferably in their local language.



#### International Event

24 March 2022. Webinar in English for market players in addition to the local events. Supplier Pitching session. See next slides for details.



#### **OMC** Questionnaire

See next slides for details.



Matchmaking See next slides for details.



# We are aiming to improve the requirements with your feedback prior to the call launch

Complete the OMC questionnaire and let us know your thoughts!



#### Obtain market feedback

Key for the success of the procurement

#### QUESTIONNAIRE

SCOPE DOCUMENT (included in the questionnaire)

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

### Creation of a competitive consortium

We encourage suppliers which cannot cover the whole iProcureSecurity PCP scope to team up with other organisations.





#### MATCHMAKING TOOL

Fill in the Market Consultation questionnaire to get support for your partner search pcp.iprocuresecurity.eu/matchmaking/



#### PITCHING AT THE INTERNATIONAL WEBINAR

Participate in in a dedicated pitching session at the international event and meet other organisations looking for partnership. If you have not yet stated a preference while registering for the OMC, send an email to office@iprocuresecurity.eu



### Our Roadmap

Tentative timeline



