



# ACTIVE PCP

**Pre-Commercial Procurement  
of Innovative Personal Protective  
Equipment for First Responders**

## **ACTIVE PCP: Preliminary Open Market Consultation (OMC) Document**

**March 2026**



This project has received funding from the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement No 101226110.

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The ACTIVE PCP project receives funding under the European Union's Horizon Europe framework program for research and innovation under the grant agreement No 101226110, managed by the European Research Executive Agency (REA). The EU is, however, not participating as a contracting authority in the procurement.

A Prior Information Notice, or PIN, has been published in TED-eNotices2 on 18.02.2026 to announce the Open Market Consultation on potential future procurement activity (notice publication number: 115086-2026 [[115086-2026 - Planning - TED](#)]).

The original language of this open market consultation is English.

## Abbreviations and acronyms

CBRN-E	Chemical, Biological, Radiological, Nuclear, and Explosive
CET	Central European Time
EC	European Commission
EU	European Union
FRAND	Fair, Reasonable and Non-Discriminatory
GA	Grant Agreement
GDPR	General Data Protection Regulation
HAZMAT	Hazardous Materials
HE	Horizon Europe
IPRs	Intellectual Property Rights
OMC	Open Market Consultation
PBG	Public Buyers Group
PCP	Pre-Commercial Procurement
PIN	Prior Information Notice
PPE	Personal Protective Equipment
R&D	Research and Development
REA	European Research Executive Agency
RFI	Request For Information
SMEs	Small and Medium Enterprises
SOTA	State-Of-The-Art
TED	Tenders Electronic Daily
TRL	Technology Readiness Level

## Key definitions

Consortium	Group of public and/or private entities (including public buyers and supporting organisations) that are part of the ACTIVE PCP. For more information: <a href="https://activepcp.eu/">https://activepcp.eu/</a>
Contractor	A company or entity that has been awarded a contract under the PCP.
Lead Procurer	A Public Buyer who acts as a Procurer in the PCP and purchases the R&D services on behalf of itself and other Public Buyers (in this case, KEMEA).
Public Buyer	A public entity that purchases goods or services from the market and is subject to the public procurement regulation.
Technology Provider	A company or entity that develops and/or sells technology in the market.

## Keywords and search terms

A preliminary market analysis has been conducted to confirm whether the identified needs are indeed "unmet" and if there are already solutions available on the market that can meet the aforementioned needs and fulfil the requirements that will be set in the upcoming period or they will already become available before it is possible to complete the planned procurement. The following keywords and search terms below have been utilised to extract, define and specify the preliminary results.

Personal protective equipment
PPE
Protection suits
Body gear
Protective body armour
Chemical protection suit
Biological protection suit
Emergency protection gear
Health protection gear
Tracking of health biometrics
Vital sign assessment
Health status monitoring
Real-time health tracking
Biometric monitoring
Fireproof protection
Flame resistance
Chemical shield layer
User geographic coordinates
Contaminant suits
Hazard gear
Heat resistance
Firefighter helmet
Fire boots
Fireproof hood

Firefighting gloves
Gastight suit
Decontamination
Gas detectors
Full face respirator
Chemical resistant boots
Chemical resistant gloves
Chemical resistance proof
Thermal resistance proof
Liquid splash resistance proof
Mechanical resistance proof
Combined gas & particle filter
CBRN Filter for mask
Butyl rubber gloves
Nitrile chemical gloves
Viton chemical gloves
Anti-fog CBRN visor
Ballistic & CBRN combined visor
Lightweight protective suit
Heat stress reduction
Reusable CBRN suit

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# 1 Introduction

ACTIVE PCP (Pre-Commercial Procurement of Innovative Personal Protective Equipment for First Responders) is a European Union-funded project that brings together first responders, public authorities, and technology providers to co-create innovative solutions for next-generation Personal Protective Equipment (PPE) for first responders. The project addresses the growing challenge of keeping responders safe and operationally effective amid evolving threats – from CBRN-E incidents and HAZMAT situations to complex emergencies triggered by terrorism, industrial accidents, or natural disasters. Developing effective PPE solutions that meet diverse operational needs across different countries and responder organisations remains difficult, as many off-the-shelf products are inadequate, fragmented, or optimised for single-hazard scenarios. ACTIVE PCP seeks to overcome this gap by actively involving the "demand side" (public safety buyers and end-users such as police, firefighters, and emergency medical services) in defining their unmet needs and steering industry R&D efforts towards those needs.

The action will lead to innovative PPE Solutions that provide:

- a) Improved protection of first responders in **complex and multi-hazard environments**, including CBRN-E, HAZMAT, terrorist attacks, and natural disasters.
- b) Enhanced **usability, comfort, and mobility** of PPE, reducing physical strain, heat stress, and fatigue while enabling sustained operational performance.
- c) Increased **adaptability and versatility** of PPE solutions, allowing responders to operate effectively across different threat scenarios without frequent equipment changes.
- d) Improved **responder safety and situational awareness** through the integration of advanced technologies such as physiological monitoring, environmental sensing, and location tracking.
- e) Strengthened **interoperability** of PPE across agencies and borders, supporting coordinated multi-stakeholder and cross-border emergency operations in line with EU requirements.
- f) Greater **resilience and sustainability** of PPE systems, through reusable, easy-to-maintain designs that reduce dependency on fragile supply chains.

Following the EC Guidelines on Pre-Commercial Procurement (PCP), through a competitive series of design, prototype and pilot steps, the ACTIVE PCP will contract suppliers to deliver the creation and deployment of the envisaged PPE Solutions.

As part of the **Open Market Consultation (OMC)**, this document describes the scope and initial needs of the ACTIVE PCP project. The OMC represents a specific phase during the overall PCP methodology, aiming to actively approach the market when the identified needs of the procurers must be communicated openly and clearly to all potentially interested bidders. Market players get the unique opportunity to give feedback on the requirements of the foreseen pre-commercial tender.

In this document, you will find the following sections:

- Understanding ACTIVE PCP – including its Vision, Key Threats and Scenarios
- Scope of the Open Market Consultation (OMC) events & Request for Information (RFI) questionnaire
- Procurement Process
- Initial Market Analysis
- Call for Tenders

## 2 UNDERSTANDING ACTIVE PCP

### ACTIVE PCP VISION

The vision of the **ACTIVE PCP** project builds the foundation for the development of **innovative Personal Protective Equipment (PPE)** systems designed to overcome the fundamental shortcomings of current gear. By integrating advanced materials and smart technologies, the project aims to significantly enhance the **safety, operational efficiency, and adaptability** of first responders, providing a leap forward in protection for those facing evolving multi-hazard threats, including Chemical, Biological, Radiological, Nuclear, and Explosive (**CBRN-E**) incidents.

This section elaborates on the shortcomings of the current state of the art and elucidates why existing solutions do not meet the needs of first responder organisations in the field, necessitating a **Pre-Commercial Procurement (PCP)** process to acquire new R&D services. Based on in-depth assessments, it is evident that an innovative PPE system must be developed to address critical gaps in **usability, comfort, and real-time monitoring**.

Current practices in PPE often fail to address unknown or emerging hazards and lack the adaptability required for diverse operational settings. For instance, many CBRN-E resistant suits cannot withstand heat, and heavy, restrictive designs frequently lead to overheating, fatigue, and reduced motor precision. Furthermore, poorly fitting gear - particularly for **female firefighters** - can compromise protection and lead to non-compliance in the field. The ACTIVE PCP project envisions a solution where equipment is no longer a hindrance but a seamless extension of the responder.

A system that truly impacts the work of emergency teams must provide **enhanced situational awareness**. The ACTIVE PCP vision includes the integration of **miniaturised sensors** within the PPE to track responders' health and environmental hazards in real-time, coupled with secure data transmission. This technological leap ensures that commanders and peers have immediate access to life-saving data, such as physiological strain and location tracking, during complex operations.

To reach the desired quality and efficiency improvements, suppliers must focus on several **Key Innovation Areas**:

- **"All-Hazard" Fabric Solutions:** Developing lightweight, high-performance materials that provide comprehensive protection across a wide spectrum of CBRN-E and thermal hazards.
- **Adaptive and Modular Design:** Creating configurable systems with interchangeable layers that allow responders to quickly adapt to different roles and threat scenarios without frequent equipment changes.
- **Ergonomics and Comfort:** Utilising stretchable fabrics and advanced ventilation to reduce physical strain and heat stress, enabling sustained performance during extended shifts.
- **Sustainability and Maintenance:** Developing self-cleaning or antimicrobial materials to reduce the heavy logistical burden of decontamination and ensure supply chain resilience through durable, reusable designs.

Furthermore, the solution must prioritise interoperability. ACTIVE PCP aims to strengthen cooperation across European agencies and borders, ensuring that PPE solutions comply with emerging EU standards and certifications. This alignment supports coordinated multi-stakeholder operations and ensures that first responders from different nations can work together effectively using compatible, high-standard equipment.

Ultimately, improving PPE solutions means to provide:

- Improved protection of first responders in **complex and multi-hazard environments**, including CBRN-E, HAZMAT, terrorist attacks, and natural disasters.
- Enhanced **usability, comfort, and mobility** of PPE, reducing physical strain, heat stress, and fatigue while enabling sustained operational performance.
- Increased **adaptability and versatility** of PPE solutions, allowing responders to operate effectively across different threat scenarios without frequent equipment changes.
- Improved **responder safety and situational awareness** through the integration of advanced technologies such as physiological monitoring, environmental sensing, and location tracking.
- Strengthened **interoperability** of PPE across agencies and borders, supporting coordinated multi-stakeholder and cross-border emergency operations in line with EU requirements.
- Greater **resilience and sustainability** of PPE systems, through reusable, easy-to-maintain designs that reduce dependency on fragile supply chains.

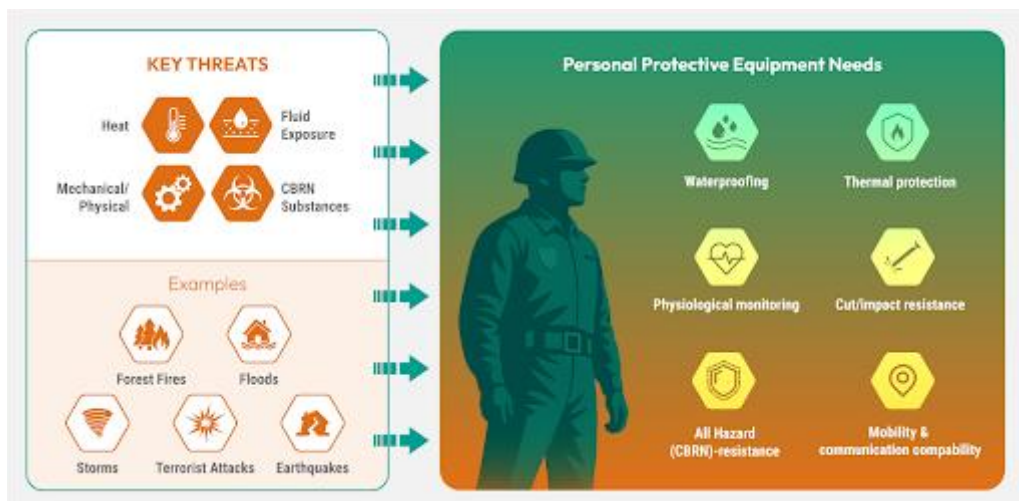


Figure 1: ACTIVE PCP – Conceptual graphic

### Key Threats and Scenarios

As part of its foundational work, the project carried out an **initial** structured needs-assessment process to identify the key threats that responders face in the field, and to translate those threats into concrete innovation requirement (**still in progress, and subject to changes**).

The framework presented here represents the output of that initial assessment — a synthesis of operational realities, environmental hazards, and functional gaps — organised into five major threat categories. For each category, a set of specific innovation needs has been identified, guiding the research and development priorities of the project.

*Understanding this framework is essential for any stakeholder, supplier, or technology partner engaging with the ACTIVE PCP Project, as it forms the basis of all subsequent procurement and evaluation activities.*

## Threat Categories and Associated Innovation Needs

1

### CBRN Substances

*Exposure to unknown liquids, aerosols, and gases*

Responders operating in environments contaminated by chemical agents - whether industrial accidents, hazardous material incidents, or CBRN scenarios - face significant risks from exposure to unknown or known toxic substances. The inability to identify, resist, or decontaminate quickly can result in injury, secondary contamination, or mission failure.

#### Innovation needs identified for this threat:

1. Chemical resistance against unknown liquid, aerosol, and gas threats
2. Multi-layer or single-layer barrier materials with broad-spectrum chemical protection
3. Integration capacity with existing respiratory protection systems (e.g. gas-tight masks)
4. Donning and doffing capability — allowing rapid and safe removal of contaminated gear
5. Detection and identification via wearable sensors and embedded systems
6. Decontamination-resistant materials that remain functional after decontamination procedures

2

### Heat and Thermal Threats

*Fire, extreme temperatures, steam, and radiant heat*

Firefighters, industrial rescue teams, and disaster responders frequently encounter elevated temperatures, open flames, and steam. Prolonged exposure to thermal stress not only causes direct burns but also leads to heat-related illness, impairing performance and decision-making during critical operations.

#### Innovation needs identified for this threat:

1. Resistance to high temperatures, open flames, and steam without compromising wearability
2. Heat insulation sufficient to prevent burns, heat stress, and steam scalding

3. Protection against smoke, ash, and airborne particulate matter
4. Flame-retardant and non-melting materials that maintain structural integrity
5. Breathable design to reduce thermal overload during prolonged operations
6. Thermal regulation — active or passive mechanisms to manage body heat accumulation
7. Protection against the absorption and incorporation of smoke, ash, and fine particulates into the garment

## 3

**Fluid Exposure***Rain, flooding, sweat, oils, and biological pollutants*

Fluid exposure is a pervasive challenge across a broad range of response scenarios — from flooding and rainfall to industrial spills and biological incidents. Beyond the immediate physical discomfort, contact with contaminated water or chemical fluids poses serious health risks and can degrade the structural and protective properties of equipment over time.

**Innovation needs identified for this threat:**

1. Waterproof and water-resistant materials with controlled semi-permeability (e.g. to manage perspiration)
2. Protection against contaminated water carrying biological and chemical pollutants
3. Slip-resistant footwear (boots) and stable-grip gloves to maintain traction in wet environments
4. High mobility and low weight — ensuring fluid-resistant gear does not impede operational agility
5. Quick-drying or drainage-capable materials to minimise prolonged fluid contact
6. Anti-fog mask lenses to maintain visibility in humid and wet conditions

## 4

**Mechanical and Physical Violence Threats***Abrasion, cutting, tearing, and puncture*

In both natural disaster environments and security operations, responders are exposed to sharp objects, debris, fragmented materials, and physical confrontation. Mechanical injuries — though sometimes overlooked in favour of more dramatic chemical or thermal risks — represent a significant and consistent source of harm in operational settings.

**Innovation needs identified for this threat:**

1. Mechanical resistance calibrated to different threat levels — from low-hazard debris to high-risk cutting or puncture scenarios
2. Cut-resistant materials offering protection without sacrificing flexibility or dexterity
3. Reinforced padding in critical body areas to mitigate impact and abrasion injuries

5

**Operational Barriers and Limitations**

*Systemic and functional constraints on field performance*

Beyond physical and environmental hazards, the fifth threat category acknowledges the operational constraints that compromise the effectiveness of protective equipment in the field. These are not environmental threats in the traditional sense, but systemic barriers — such as equipment incompatibility, poor ergonomics, and limited situational awareness — that can be just as dangerous as external hazards.

**Innovation needs identified for this threat:**

1. High mobility and flexibility to support dynamic tactical response without restriction
2. Enhanced visibility and identification features for responder localisation in complex environments
3. Compatibility with communication systems and situational awareness tools currently in use
4. Ergonomic design optimised for long-duration wear, reducing fatigue and improving performance
5. Rapid adaptability to changing operational conditions — modularity, quick adjustment, and reconfiguration

## Significance of the Framework

The five threat categories and their associated innovation needs are an initial assessment and they will be further developed before launching the Call for Tender. However, they were not developed in isolation. They reflect the lived experience of operational responders, informed by scenario analysis, expert consultation, and cross-border knowledge exchange among the ACTIVE PCP consortium partners.

Together, they establish a clear and evidence-based foundation for the innovation process. Any solution, prototype, or technology proposed within the ACTIVE PCP framework will be evaluated against its capacity to address one or more of these identified needs — ensuring that innovation remains grounded in real-world requirements and delivers genuine operational value.

This framework will continue to evolve as the project progresses, with refinements based on market engagement, prototype testing, and stakeholder feedback. It represents the starting point — not the ceiling — of what the ACTIVE PCP Project seeks to achieve.

## Scenarios

The scenarios below have been created to highlight the operational context under which the described key threats and innovation needs should be considered.

The scenarios may be further updated, and they aim to comprehensively include the main operational issues faced by the ACTIVE PCP Public Buyers.

<b>SCENARIO ID</b>	01 - Security and Safety (Mixed)
<b>SCENARIO NAME</b>	Festival Drone-Based Chemical Dispersal
<b>TYPE</b>	● SECURITY/SAFETY-ORIENTED
<b>CLASSIFICATION</b>	Public Event Chemical Attack + Drone-Based Delivery
<b>DESCRIPTION</b>	<p>During an open-air festival, several visitors suddenly experience irritation of the eyes and respiratory tract in front of a stage area. The cause is initially unclear; visitors see drones flying around the festival area, dispersing unknown substances.</p> <p>First responding fire and rescue teams must immediately rescue affected persons, provide medical assistance, and secure the area, although the type and extent of the chemical hazard are initially unknown. Only later is the incident classified as a chemical hazardous materials event, and specialised units are requested.</p>
<b>SECURITY THREATS</b>	<ul style="list-style-type: none"> <li>• Coordinated drone attack</li> <li>• Potential multiple drones</li> <li>• Terrorist or extremist intent</li> <li>• Secondary strike risk</li> <li>• Mass panic</li> </ul>
<b>SAFETY THREATS</b>	<ul style="list-style-type: none"> <li>• Airborne toxic exposure</li> <li>• Heat exhaustion</li> </ul>

	<ul style="list-style-type: none"> <li>• Delayed evacuation</li> <li>• Large-scale contamination</li> </ul>
<b>KEY ROLES</b>	<p>Police: Area isolation, threat neutralisation, public order</p> <p>Fire Service: Ventilation, containment, structural safety</p>
<b>THREATS</b>	KEY THREAT 1, KEY THREAT 2, KEY THREAT 4, KEY THREAT 5
<b>DURATION</b>	4-6 hours
<b>CASUALTIES</b>	20–80 persons
<b>AREA</b>	Outdoor

<b>SCENARIO ID</b>	02 - Safety
<b>SCENARIO NAME</b>	Motorway Crash with Delayed CBRN Identification
<b>TYPE</b>	● SAFETY-ORIENTED
<b>CLASSIFICATION</b>	Traffic Accident + Delayed Hazardous Materials (CBRN) Event
<b>DESCRIPTION</b>	<p>In a heavy rain day, after a traffic accident between a passenger car and a truck at a motorway rest area, the fire service is dispatched due to a vehicle fire with a person trapped inside. Initially, there are no indications of hazardous materials involved.</p> <p>Upon arrival, the passenger car is fully engulfed in flames, with one person trapped inside. The truck is located in close proximity and shows no visible hazardous goods markings. The truck driver is injured and unable to provide information. Due to the immediate threat to life, the first responding crews immediately initiate rescue operations and fire suppression while wearing breathing apparatus.</p> <p>During these operations, firefighters experience irritation of the eyes and respiratory tract, and a colourless liquid is observed on the roadway. Only after the immediate rescue phase is completed is it identified that the truck was transporting damaged IBC containers containing a corrosive chemical. The incident is subsequently classified as a hazardous materials (CBRN) event, and specialised response units are requested.</p>
<b>SECURITY THREATS</b>	Illegal trafficking of unknown dangerous goods (possible explosive devices/substances)
<b>SAFETY THREATS</b>	<ul style="list-style-type: none"> <li>• Vehicle fire and explosion risk</li> <li>• Toxic vapor inhalation</li> <li>• Corrosive liquid dermal exposure</li> <li>• Slipping hazard due to chemical + rain</li> <li>• Environmental contamination</li> <li>• Delayed hazard recognition</li> </ul>

<b>KEY ROLES</b>	Fire Service: Ventilation, containment, structural safety
<b>THREATS</b>	KEY THREAT 1, KEY THREAT 2, KEY THREAT 3, KEY THREAT 5
<b>DURATION</b>	1 - 3 hours
<b>CASUALTIES</b>	5
<b>AREA</b>	Outdoor

<b>SCENARIO ID</b>	03 - Security
<b>SCENARIO NAME</b>	Illicit Fentanyl Mega-Lab Explosion + Armed Threat
<b>TYPE</b>	● SECURITY-ORIENTED
<b>CLASSIFICATION</b>	Organised Crime + CBRN Incident + Improvised Chemical Process Hazards
<b>DESCRIPTION</b>	During a targeted police operation against a high-capacity clandestine fentanyl production lab hidden inside a residential building, criminals trigger an improvised explosive device (IED) designed to disperse fentanyl powder and volatile precursors. A violent chemical flash-reaction occurs due to uncontrolled acetyl chloride vapours, creating a toxic airborne cloud inside confined spaces. Multiple police officers are exposed while criminals remain armed and mobile within the structure. Fire rapidly propagates through improvised extraction systems, threatening structural integrity and trapping civilians on upper floors.
<b>SECURITY THREATS</b>	<ul style="list-style-type: none"> <li>• Armed organised-crime group with counter-intervention tactics</li> <li>• Secondary IEDs and booby traps targeting responders</li> <li>• Attempted destruction of chemical evidence and digital records</li> <li>• Possibility of barricaded suspects or hostage-holding</li> <li>• Surveillance blockers &amp; jammers used inside the lab</li> </ul>
<b>SAFETY THREATS</b>	<ul style="list-style-type: none"> <li>• Extreme fentanyl toxicity (airborne micro-particles, dermal exposure)</li> <li>• Highly volatile precursors</li> <li>• Toxic combustion products</li> <li>• Severe respiratory threats in confined areas</li> <li>• Risk of building structure collapse</li> </ul>
<b>KEY ROLES</b>	<ol style="list-style-type: none"> <li>1. Police: Armed threat neutralisation, officers rescue</li> <li>2. CBRNE/HAZMAT: Substance ID, confinement, decontamination</li> <li>3. Fire Service: Fire suppression, structural stabilisation</li> <li>4. EMS: High-risk chemical triage</li> <li>5. Command: Scene Safety, Zone control, Monitoring, Coordination</li> </ol>
<b>THREATS</b>	KEY THREAT 1, KEY THREAT 4, KEY THREAT 5
<b>DURATION</b>	2–4 hours
<b>CASUALTIES</b>	5–10 persons

<b>AREA</b>	Indoor
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<b>SCENARIO ID</b>	04 - Security and Safety (Mixed)
<b>SCENARIO NAME</b>	Public Facility Chemical Leak & Crowd Exposure
<b>TYPE</b>	● SECURITY/SAFETY-ORIENTED
<b>CLASSIFICATION</b>	Public Safety Incident + Suspicious Chemical Release
<b>DESCRIPTION</b>	A public building such as an administrative facility, shopping centre, or railway station, an incident occurs during normal operations. Several people suddenly report irritation of the eyes and respiratory tract, and some show signs of disorientation. At the same time, a suspicious container leaking liquid is reported in a side room.
<b>SECURITY THREATS</b>	<ul style="list-style-type: none"> <li>• Possible intentional chemical release</li> <li>• Suspicious container possibly linked to sabotage or terrorism</li> <li>• Risk of secondary devices</li> <li>• Panic-induced crowd surge</li> <li>• Potential attacker among civilians</li> </ul>
<b>SAFETY THREATS</b>	<ul style="list-style-type: none"> <li>• Toxic inhalation</li> <li>• Dermal chemical exposure</li> <li>• Slipping hazard from leaked liquids</li> <li>• Fire or explosion risk</li> <li>• Secondary contamination spread</li> </ul>
<b>KEY ROLES</b>	Police: Area isolation, threat neutralisation, public order Fire Service: Ventilation, containment, structural safety
<b>THREATS</b>	KEY THREAT 1, KEY THREAT 4, KEY THREAT 5
<b>DURATION</b>	3-5 hours
<b>CASUALTIES</b>	20–80 persons
<b>AREA</b>	Indoor

## 3 Purpose of the Open Market Consultation

### Scope and main objectives

This document outlines the objectives and procedures of the Open Market Consultation (OMC) for the ACTIVE PCP project – a forthcoming Pre-Commercial Procurement (PCP) in the field of innovative Personal Protective Equipment (PPE) for first responders, including police, firefighters, and emergency medical services, operating in complex CBRN-E and HAZMAT environments.

The OMC formally commences with the publication of a Prior Information Notice (PIN) in the Tenders Electronic Daily (TED) and concludes on the date indicated in this document, unless terminated earlier by the public buyers. Through this OMC, the ACTIVE PCP Public Buyers Group (PBG) – consisting of KEMEA, acting on behalf of the Hellenic Police (HP) and as Lead Procurer, the Fire and Rescue Department under the Ministry of the Interior of the Republic of Lithuania (PAGD), the Fire Department of Dortmund (FDDO) and the Cyprus Fire Service (FCS) - aims to challenge the market to provide input and insights on innovative PPE solutions addressing critical multi-hazard operational scenarios for first responders (see Section 2.5), by improving protection levels, usability, comfort, and technological integration (e.g. health and environmental monitoring).

In this context, the OMC serves to inform technology providers, research institutions, end-users (e.g. police, fire and rescue services, emergency medical services), and other stakeholders about the needs and requirements of the buyers, and to gather their feedback on the ACTIVE PCP challenge. Another key objective is to assess the market's capability to meet these needs and to obtain input on the feasibility of the procurement plans and conditions described in this document (and its annexes). In sum, the OMC seeks to:

1. Validate the state-of-the-art (SOTA) analysis findings and the viability of the preliminary technical and financial assumptions regarding next-generation multi-hazard PPE for first responders.
2. Raise industry awareness about the upcoming PCP and its opportunities.
3. Collect insights from the market to fine-tune the PCP tender specifications.

This OMC is conducted under the law of the Lead Procurer (Greek law).

The contracting authorities involved are not legally bound by any outcome of the OMC. Launching this OMC does not obligate the buyers to initiate a procurement; if a PCP call is subsequently launched, the PBG reserves the right to adjust or refine any element of the challenge and requirements based on OMC feedback. Participation in the OMC is voluntary, open, and non-binding. The OMC is not part of any pre-qualification or selection process, and no advantage or disadvantage will be given to any supplier or group of suppliers as a result of participation.

All information shared during the OMC (excluding any confidential solution details) will be published openly in English on the project website, ensuring transparency and equal treatment of all parties.

Where appropriate, parts of the information received from market parties can be shared with the European Commission (EC) and the granting authority (REA), in line with the Grant Agreement (GA).

### Who can participate?

The OMC is open to all interested parties - in particular to technology providers (companies including start-ups, SMEs, large industry, etc.) and end-users such as public authorities, first responders, law enforcement agencies, fire and rescue services, and emergency medical services involved in the use or

provision of PPE. However, please note that only suppliers eligible for Horizon Europe PCP actions (i.e. established in EU Member States and/or Horizon Europe Associated Countries and committing to perform the R&D services within those countries) will be eligible to participate in the subsequent PCP procurement.

Participation in the OMC is voluntary and non-binding and is at the own expense and risk of economic operators. An economic operator cannot charge any costs to the PBG for participation in the OMC or for (re-)use of its information in the context of a future procurement procedure.

Participation in this OMC is not a condition for submitting a tender in the subsequent procurement, does not lead to any rights or privileges for the participants, and is not part of any pre-qualification or selection process. The provided input in this OMC will not be used to evaluate future offers and/or proposals.

## Activities & timetable

The ACTIVE PCP OMC will be carried out through a combination of events and interactions designed to promote a two-way dialogue with the market.

- A series of national OMC webinars in different EU languages (Greek, German, Lithuanian and Spanish), organised and broadcasted online from 27 to 30 April 2026, targeting suppliers and end-users in the participating countries.
- An international (main) OMC event in English (hybrid) bringing together suppliers, researchers, and first responder organisations from across Europe.
- A Request for Information (RFI) questionnaire using the EU Survey tool: <https://ec.europa.eu/eusurvey/runner/12e747f7-38ad-d2a6-6bdd-8328c5872edb>
- Other activities as deemed necessary within the scope of the project (e.g. matchmaking between suppliers and buyers, training sessions for public buyers and end-users).

The timetable of activities and required actions of the OMC is as follows:

**Table 1: OMC activities and timetable**

Date	Event
<b>18 February 2026</b>	Publication of the PIN on TED-eNotices2.
<b>17 March 2026</b>	Publication of the OMC document and the online survey questionnaire on the ACTIVE PCP project website and associated channels.
<b>27 April 2026 10:00 - 12:00 CET</b>	OMC webinar in Greek (online).
<b>28 April 2026 10:00 - 12:00 CET</b>	OMC webinar in German (online).
<b>29 April 2026 10:00 - 12:00 CET</b>	OMC webinar in Lithuanian (hybrid).
<b>30 April 2026 10:00 - 12:00 CET</b>	OMC webinar in Spanish (online).
<b>7 May 2026</b>	Hybrid International OMC event in English (Brussels).

<b>20 May 2026 17:00 CET</b>	Deadline for the submission of answers to the questionnaire in the EU Survey
<b>29 May 2026</b>	Publication of the OMC report on <a href="https://www.activepcp.eu/">https://www.activepcp.eu/</a>
<b>29 May 2026</b>	Formal closure of the OMC.

The ACTIVE PCP consortium is entitled to adjust the planned activities and the timetable above, and to include new activities at any time according to the needs and responses of the market. Furthermore, it may decide to terminate the OMC for its own reasons at any time. In that case, ACTIVE PCP consortium will publish such modifications or termination on TED and the project's website ([Home - ACTIVE PCP](#)).

The events and webinars celebrated within the framework of the OMC will be recorded. In that case, by attending the physical event, you will consent to be recorded. By using your video and microphone during the webinars, you will consent to be recorded. If you do not want your voice and image to be recorded during the webinars, you may ask your questions using the chat. The ACTIVE PCP consortium shall use those records for the purpose of the project only.

In addition, please be aware that photos may be taken during the meetings. The ACTIVE PCP consortium shall use those photos for the project only.

## Registration

Registration is required to participate in the OMC webinars and the international hybrid OMC event. Interested participants are asked to register via the online form available on the ACTIVE PCP website (section "Open Market Consultation" / "Tenders"): [Open Market Consultations - ACTIVE PCP](#)

Registration is free of charge. In the registration form, you will be asked to provide basic information (name, organisation, contact details, etc.) and indicate which session(s) you plan to attend (national-language OMC webinars and/or the international OMC event in English). Early registration is encouraged, as it will help the organisers in planning the sessions and logistics.

For the international hybrid event, on-site attendance may be limited by venue capacity, so prior registration is essential (places will be confirmed by the organisers). Priority for on-site participation may be given to organisations that have submitted a completed RFI questionnaire (if applicable). Online participants will receive webinar access details by email after registration. The project will ensure that remote attendees can fully engage with the event (live streaming of presentations and an interactive Q&A/chat for questions).

Please note that by registering, participants agree to the project's [privacy policy](#) regarding the handling of personal data. Personal data will be used solely for the purposes of organising the OMC and will be treated as confidential in compliance with GDPR (EU Regulation 2016/679) and any other applicable EU legislation.

## Procedure

The OMC starts on the date of its publication in TED and ends on the date set in the timetable, unless terminated earlier.

Interested parties are requested to register through the link provided above in order to participate in the events and receive additional information about the project. The questionnaire should be filled out before the deadline indicated in the timetable above.

The ACTIVE PCP consortium will support interested parties throughout the whole OMC during the events and by answering questions through a Q&A document, which will be published on the project's website.

Additional written contributions in the form of a Request for Information (RFI) questionnaire or other questionnaires (via the EU Survey platform), aiming to collect market information on innovative and commercial solutions, may be requested.

The responses to the questionnaire should not contain any confidential information. As the questionnaire is intended to explore the market "as is", there are no right or wrong answers. The answers provided will be used as input for the procurement strategy and contract conditions.

After processing and analysing the answers, the ACTIVE PCP consortium will disseminate the results to the widest possible audience. Nevertheless, all answers provided by market parties will be anonymised and treated as confidential. The ACTIVE PCP consortium will therefore not provide information about specific answers from economic operators. Only the general findings and a summary of the answers will be provided. The results of this OMC will be published on the project's website.

In case the information provided in this document and annexes needs further clarification, economic operators may ask questions during the events, or via the contact email address ([office@activepcp.eu](mailto:office@activepcp.eu)).

Economic operators who wish to provide additional confidential information during the OMC can send an email to the email address indicated above. The information must be clearly marked as confidential. Confidential information will not be included in the OMC report.

### **Request for Information (RFI) questionnaire**

- As part of the OMC, the ACTIVE PCP consortium is seeking written feedback from technology providers, system integrators, research institutions, and all relevant stakeholders via a Request for Information (RFI) questionnaire. The RFI is available online via the EU Survey tool [<https://ec.europa.eu/eusurvey/runner/12e747f7-38ad-d2a6-6bdd-8328c5872edb>] and the questions are also listed below for reference.

Please note that taking part in this survey is not a prerequisite for participation in the future PCP and does not give any advantage to any technology provider. ACTIVE PCP will ensure transparency, openness, and equal treatment of all economic operators. All information provided in the questionnaire will be anonymised, summarised and published online in English on the project's website.

Your personal data will be collected, processed, stored and used by the ACTIVE PCP consortium with the sole purpose of gathering information from the market within the framework of the ACTIVE PCP. Personal data will be treated as strictly confidential according to the General Data Protection Regulation (Regulation 2016/679 of the European Parliament and of the Council – GDPR). You may exercise your right to access your personal data and the right to rectify such data by contacting: [office@activepcp.eu](mailto:office@activepcp.eu)

## 4 The Pre-Commercial Procurement approach

This OMC concerns an upcoming PCP of R&D services to be performed in their entirety (100%) in the EU Member States and/ or Associated Countries<sup>1</sup>.

PCP is an approach that allows public procurers to buy R&D from several competing technology providers in parallel, to compare alternative solution approaches, and to identify the best value-for-money solutions that the market can deliver to address their needs. In PCP, there is a risk-benefit sharing under market conditions between the public procurer and the technology providers, and a clear separation between the PCP and the deployment of commercial volumes of end-products.

The PCP tender will start with the publication of the contract notice on Ted-eNotices 2 along with the Call for tenders, and its annexes, inter alia the framework agreement, and the phase contracts. After evaluating the offers submitted by the technology providers according to the rules established in the tender documents, the contracts will be awarded, and a contract award notice will be published on Ted-eNotices2. The process will be monitored to ensure sound deployment, integration and validation of the PCP.

The PCP procedure is composed of three phases: solution design, prototyping and original development and testing.

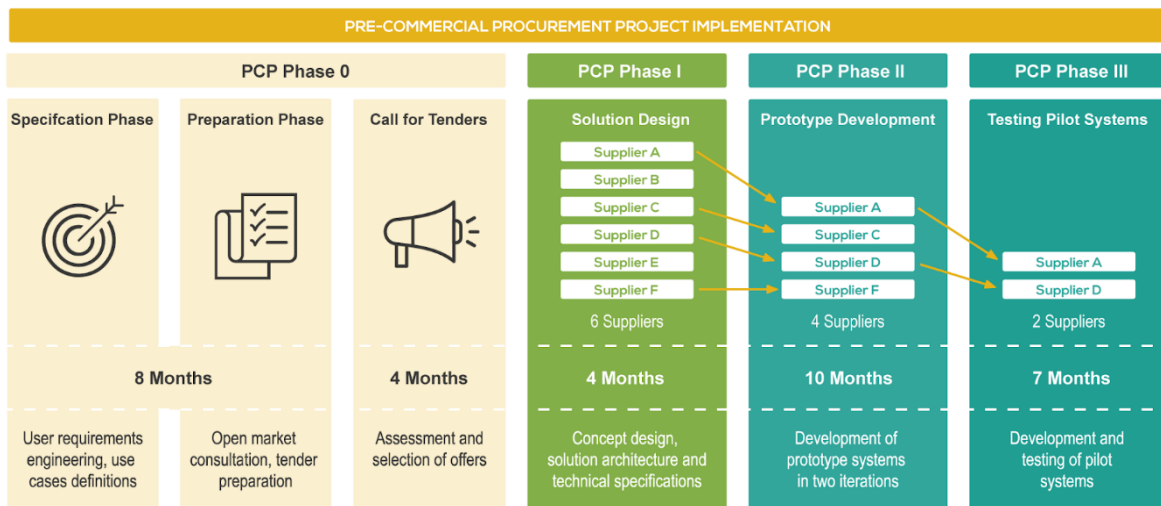


Figure 2: ACTIVE PCP – Project Implementation

**Phase 1. Solution Design:** During this phase, the contractors will be asked to describe their PPE solution, providing the complete architecture and design thereof and verifying the technical, economic and organisational feasibility of their approach to address the ACTIVE PCP challenge.

**Phase 2. Prototyping:** This phase concerns the development of the first PPE prototypes, which will be tested. Contractors will develop prototypes based on the design documents delivered in the previous

<sup>1</sup> The aforementioned point means that while participation in the PCP is open regardless of the place of establishment, all research and development activities covered by the contract must be physically carried out within the EU or Horizon Europe Associated Countries. Suppliers must therefore ensure that their R&D teams, facilities, subcontractors, and testing activities involved in the PCP are located exclusively in these countries.

phase and test their solutions, including lab tests and controlled trials, to assess technical performance and usability.

**Phase 3. Original Development and Testing:** This phase will validate the final PPE solutions (at least two) in diverse pilot conditions using the detailed scenarios and processes developed in the verification and validation strategy. During phase 3, a feedback mechanism will be established between the PBG and the selected contractors, enabling end-users to request improvements directly. The Public Buyers will request deliverables such as integration and field acceptance reports to confirm that the final solutions have been successfully deployed and validated in real or realistic operational environments.

After each phase, intermediate evaluations will be carried out to progressively select the best of the competing solutions. The contractors with the best-value-for-money solutions will be offered a specific contract for the next phase.

The contractors will retain ownership of the IPRs that they generate during the PCP and will be able to use them to exploit the full market potential of the developed PPE solutions, subject to the specific IPR provisions and FRAND-based exploitation obligations defined in the framework agreement.

For the three phases of the pre-commercial procurement, the table below shows the envisaged distribution of budget, the number of expected suppliers for each of them as well as the planned share of R&D product costs for Phase III (pilots). The final distribution will be agreed also taking into account the feedback received during the OMC. Table 2: PCP phase overview

**Table 2: ACTIVE PCP – Estimated budget per phase**

PCP PHASE	Duration	Number of contractors (foreseen)	Maximum budget per contractor	Total budget per phase (VAT included)
<b>PHASE 1: Solution design</b>	4 months	6	58.333,33	350.000
<b>PHASE 2: Prototyping</b>	10 months	3	600.000	1.800.000
<b>PHASE 3: Original development and testing</b>	7 months	2	750.000	1.500.000
			<b>TOTAL</b>	<b>3.650.000</b>

### Contracts implementation

During the implementation of ACTIVE PCP, effective tools will be used in order to monitor the performance of the R&D suppliers and provide regular feedback during each phase. Each contractor will be assigned a main contact person (their supervisor) appointed by the procurers as the main point of contact. The monitoring process will be divided into three sets of activities, aligned with the project's PCP governance and monitoring framework:

- **Pre-monitoring:** A kick-off meeting per contractor will be scheduled at the beginning of each PCP phase, and the selected contractors will be requested to present their implementation schedule of the phase they are entering. During the same meeting, the supervisor will present the framework for the review. The objective is to establish a close and fruitful communication channel with the contractors, to ensure from the outset that the project is implemented according to the needs of the buyers.
- **Monitoring:** Contract implementation will be monitored and reviewed against the expected outcomes for each phase, with increasing intensity from phase 1 to phase 3. This may include regular meetings (online or on-site), visits to contractor facilities, reviews of documentation and test results, and ad-hoc inspections if R&D progress is at risk. Contractors will be required to report regularly (e.g. monthly) on the status of work, progress achieved, and any issues

encountered. All documentation generated by the contractors will be reviewed, and recommendations or focus areas for further work will be identified.

- **Post-monitoring:** At the conclusion of the monitoring activities, the supervisor will provide written feedback for each contractor at each PCP phase, including comments and remarks on the outcomes under review. Monitoring activities will be continued after the PCP is completed, in particular to check whether the contractors are successfully commercialising the R&D results within the call-back period defined in the PCP framework agreement. If that is not the case, the ACTIVE PCP consortium may request that R&D suppliers grant licenses under FRAND terms to other third parties or transfer back ownership of results to the PBG, in line with the agreed IPR conditions.

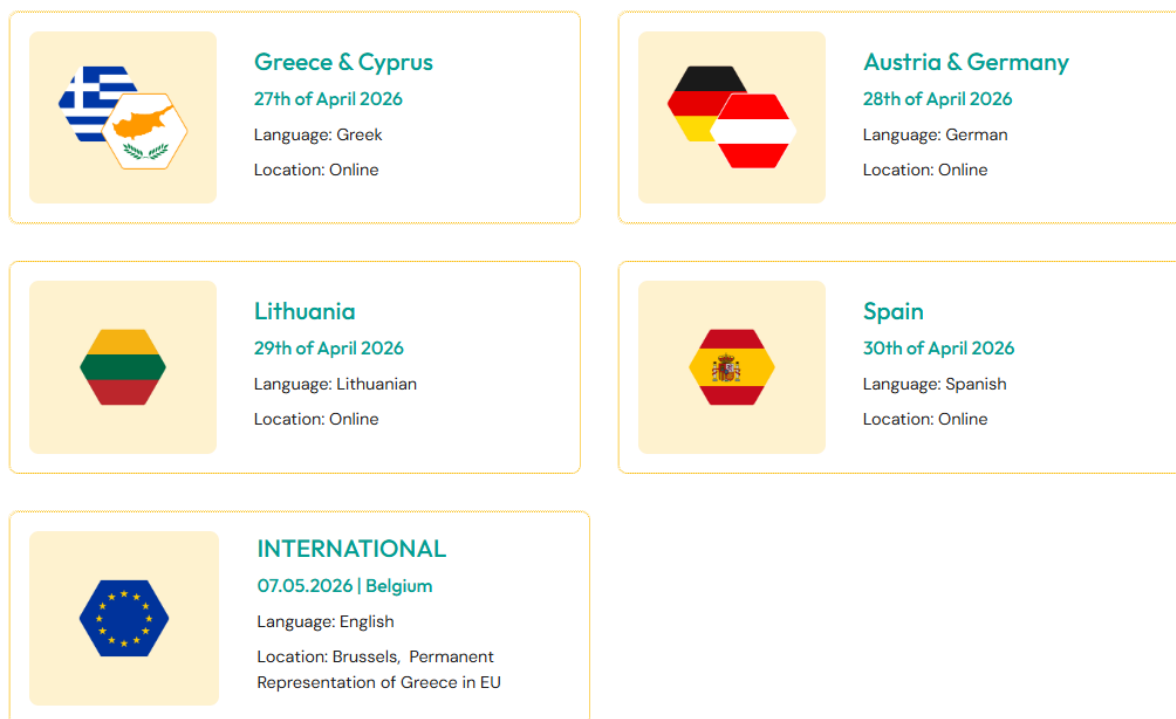
## PCP-phase 0 – Open Market Consultations

An OMC aims to:

- **inform** potential suppliers (industry) about the ACTIVE PCP opportunities.
- **explain** in detail the pre-commercial procurement process
- **open a dialogue** with market stakeholders about the scope of procurement envisaged in the project, including technical specifications
- **facilitate matchmaking** among potential suppliers in need of support in the building of consortia capable of addressing the needs of the ACTIVE PCP procurers in full.

The Open Market Consultation is organised in the form of different activities that are available in the ACTIVE PCP website: <https://www.activepcp.eu/open-market-consultations/>

- **Local events.** Each procurer will hold an OMC event in their local language to engage with country stakeholders.
- **International webinar.** In addition, an international OMC webinar will be organised in English to welcome participants from any location. Besides, an added value of the international webinar will be a pitching session for market players interested in finding partners for a joint tender.



**Figure 3: OMC Dates**

- **OMC online questionnaire.** Organisations related to ACTIVE PCP are invited to fill in an online questionnaire to let us know about their experience, existing solutions and further feedback on the PCP scope. The questionnaire will be open until **the 20th of May 2026**.
- **Matchmaking platform.** Many PCP tenderers choose to apply together with international partners in a joint tender (consortium) to be able to fulfil all the requirements. The matchmaking will be facilitated by the Innovation Procurement Platform. Find more information here: <https://www.innovationprocurement.com/tenders/36/show/active-pcp-pre-commercial-procurement-of-innovative-personal-protective-equipment-for-first-responders>
- **Management of FAQs.** The questions that might rise during the OMC will be published anonymously in the ACTIVE PCP website with clear answers for any interested party.

## PCP-phase 1 – Solution Design

During this phase, the contractors will be asked to describe their PPE solution, providing the complete architecture and design thereof and verifying the technical, economic and organisational feasibility of their approach to address the ACTIVE PCP challenge.

- **Expected output:** detailed report describing the solution and a detailed plan for the prototyping and testing activities in Phases 2 & 3.
- **Duration:** 4 months
- **Maximum phase total budget:** €58,333.33 (max. €350.000 per contractor)
- The offers are ranked according to **quality – price ratio**
- **For Phase 1,** 6 contracts are expected to be awarded. Contracts are awarded until the remaining budget for that phase is insufficient to fund the next best tender.

## PCP-phase 2 – Prototype development

This phase concerns the development of the first PPE prototypes, which will be tested. Contractors will develop prototypes based on the design documents delivered in the previous phase and test their solutions, including lab tests and controlled trials, to assess technical performance and usability.

- **Expected output:**
  - Prototype specification
  - Prototype demonstration
  - Plan for development of a limited volume of solutions for field-testing
  - Updated cost/benefits forecast including a preliminary business plan
- **Duration:** 10 months
- **Maximum phase total budget:** €1.800.000 (max. €600.000 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
- **For phase 2,** 4 contracts are expected to be awarded. Contracts are awarded until the remaining budget for that phase is insufficient to fund the next best tender.

## PCP-phase 3 – Testing of pilot services

This phase will validate the final PPE solutions (at least two) in diverse pilot conditions using the detailed scenarios and processes developed in the verification and validation strategy. During phase 3, a feedback mechanism will be established between the PBG and the selected contractors, enabling end-users to request improvements directly. The Public Buyers will request deliverables such as integration and field acceptance reports to confirm that the final solutions have been successfully deployed and validated in real or realistic operational environments.

- **Expected output:**
  - Implementation in the 4 testing sites
  - Overall assessment and success verification
  - Updated cost/benefits forecast, including a preliminary business plan
- **Duration:** 7 months
- **Maximum phase total budget:** €1.500,000 (max. €750.000 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
- A minimum of **2 contracts** are expected to be awarded.

## The Public Buyers Group

The ACTIVE PCP consortium's Public Buyers Group (PBG) consists of four public buyers from four EU Member States (Greece, Lithuania, Germany, and Cyprus). The PBG includes KEMEA acting on behalf of the Hellenic Police (HP), the Fire and Rescue Department under the Ministry of the Interior of the Republic of Lithuania (PAGD), the Fire Department of Dortmund (FDDO), and the Cyprus Fire Service (FCS), supported by the Treasury of the Republic of Cyprus (TRC) as affiliated entity for procurement. For the purpose of the PCP, the PBG is represented by KEMEA as the lead procurer, acting in the name and on behalf of all buyers.

**KENTRO MELETON ASFALEIAS – CENTER FOR SECURITY STUDIES (KEMEA, Lead Procurer – Greece)**

– The Center for Security Studies (Kentro Meleton Asfaleias – KEMEA), founded in 2005 by Law 3387, is a scientific, consulting and research organisation overseen by the Minister of Citizen Protection, governed by common law and annually audited by chartered accountants. Its principal purpose is to conduct theoretical and applied research and studies, particularly at strategic level, on security topics and policies. Moreover, it is the think-tank of the Ministry of Citizen Protection on numerous policies such as public order, correctional services, terrorism prevention, crime prevention, integrated border management and civil protection as well as on various other security and societal issues; it also provides advisory and consulting risk-management services to an array of public and private organisations. Specifically, the activities KEMEA is involved in include:

- a) research and development in the context of National and European projects in close cooperation with LEAs, working under the auspices of the Ministry of Citizen Protection,
- b) training of practitioners in new systems and technologies, and
- c) the certification of practitioners in private security professions at the national level.

The main objective of KEMEA is to bring together all national Law Enforcement Agencies (Border Guards, Police, Coast Guard, Fire Service, Civil Protection agency, etc.) and to enable them to collaborate, interconnecting them with corresponding agencies, research institutions and the industry from around Europe. This dedicated approach to exploring synergies, establishing communication links, and working together to produce end-user driven research on all fronts of the Security Sector during the last decade, has earned KEMEA its participation in numerous National and EC R&D projects.

KEMEA is a leading research organization with extensive experience in European security and innovation programmes, specializing in terrorism, law enforcement support, Critical Infrastructure protection, cybersecurity – cybercrime, fight against crime and border security. The organization has successfully coordinated and participated in multiple EU-funded initiatives (H2020, Horizon Europe, ISF), with a strong track record in both Pre-Commercial Procurement (PCP) and Coordination and Support Action (CSA) projects. In particular, KEMEA has extensive experience and proven leadership in PCPs (PREVENT PCP, iProcureSecurity PCP, SHUTTLE PCP, CIVILnEXt, Broadway), PPI (DrugDetect) and Innovation Procurement projects (PREVENT, INTERCEPT, POWERBASE, EWISA, BroadEU.Net). KEMEA, in PREVENT PCP project, acted as both, Lead Procurer and Public Buyer.

**HELLENIC POLICE (HP – Greece)** - The Hellenic Police is the national law enforcement agency of Greece, operating under the Ministry of Citizen Protection. Its mission is to ensure peace and order, prevent and combat crime, protect the State and the democratic order, and safeguard citizens' safety and social development. HP combines central and regional services, invests in modern training, crime-prevention policies and technology, and participates in a large number of EU-funded security projects, providing real-world operational and end-user feedback for PPE in ACTIVE PCP.

**PRIESGAISRINÉS APSAUGOS IR GELBĖJIMO DEPARTAMENTAS PRIE VIDUAS REIKALU MINISTERIJOS – FIRE AND RESCUE DEPARTMENT UNDER THE MINISTRY OF THE INTERIOR (PAGD – Lithuania)** - PAGD

is responsible for state fire supervision, firefighting and rescue operations, and for managing activities of the civil protection system in Lithuania. Its tasks include organising and managing firefighting and rescue of people and property, coordinating emergency prevention and preparedness, and planning national readiness for civil protection in emergencies. PAGD contributes extensive operational experience in fire, rescue and HAZMAT management to the design, testing and evaluation of advanced PPE within ACTIVE PCP.

**STADT DORTMUND – FIRE DEPARTMENT OF DORTMUND (FDDO – Germany)** - The Fire Department of Dortmund is one of the largest fire departments in Germany, responsible for firefighting, rescue and emergency management in a city of about 604,000 inhabitants and participating in supra-local and nationwide CBRN incident response concepts. FDDO operates nine fire and rescue stations, supported by around 1,200 full-time and 1,000 volunteer firefighters, and maintains its own training centre and the Institute for Fire Service and Rescue Technology (IFR), which conducts applied research and development. FDDO and IFR bring strong practical and research expertise, as well as experience from multiple national and EU projects, to support analyses, exercises, pilot activities and evaluations in ACTIVE PCP.

**PYROSVESTIKI YPIRESIA KYPROU – FIRE SERVICE OF CYPRUS (FCS/FSC - Cyprus)** - The Cyprus Fire Service is responsible for fire prevention and extinguishing, rescue of lives, and a wide range of humanitarian and public assistance services across the territory of the Republic of Cyprus. It operates fire stations in all provinces and airports, and a Special Disaster Response Unit (EMAK) with specialised personnel and equipment for complex search-and-rescue and disaster situations, including 24/7 readiness. The Service also advises the public on fire protection and checks building fire-safety measures, contributing operational know-how and requirements for PPE used in diverse scenarios and environments.

**AFFILIATED ENTITY: TREASURY OF THE REPUBLIC OF CYPRUS (TRC)** - The Public Procurement Directorate of the Treasury of the Republic of Cyprus acts as the competent authority for public procurement in Cyprus and is affiliated to the Cyprus Fire Service within ACTIVE PCP. It prepares and publishes regulations, manuals, model tender forms and guidance, and reviews procedures for contracts co-financed by EU funds, providing specialised procurement expertise to support the PCP implementation.

## 5 Market analysis: preliminary results

The ACTIVE PCP worked on a preliminary market analysis that served to understand the current state of technology and the innovation gaps relevant to next-generation personal protective equipment for first responders. This section presents the preliminary results of the market analysis, which aims to identify existing technologies that can tackle the procurement challenge and to estimate the TRL thereof. It started with the publication of a survey and a preliminary Open Market Consultation (OMC) at the proposal stage to gather information from potential technology vendors about their products, services, and capabilities in the field of PPE for first responders. Then, as part of the ACTIVE PCP a Patent Landscape and Market Mapping have been started and will be further elaborated until the Call for Tenders publication.

### Patent Landscape Preliminary Results

This section presents the preliminary results of the market analysis, which aims to identify existing technologies that can tackle the procurement challenge and to estimate the TRL thereof. It started with the publication of a Call for Information and market research to gather information from potential technology vendors about their products, services, and capabilities in the field of PPE for first responders.

Preliminary analysis of the patent landscape, conducted via the IPlytics tool, shows that a wide range of technologies already exist in areas relevant to protective equipment and emergency response systems. Most patents focus on improvements in protective clothing and materials, respiratory protection systems, wearable sensors, communication technologies, and modular equipment components. Many of these solutions are already present in the market and are commercially used by emergency responders and industrial safety personnel. These technologies therefore represent relatively mature developments, particularly in areas such as protective garments and breathing apparatus.

Several of the identified patents are partially relevant to the objectives of the ACTIVE PCP project, as they address individual technological elements that are important for next-generation personal protective equipment, including hazard protection, physiological monitoring, and communication capabilities. However, the majority of the patents focus on specific components or incremental improvements, rather than on the development of fully integrated protective systems tailored to the operational needs of first responders.

The analysis also highlights a number of technological gaps. In particular, existing solutions rarely provide integrated systems combining protective materials, environmental sensors, physiological monitoring, communication technologies, and data processing within a single platform.

Overall, while the patent landscape demonstrates a strong foundation of technological innovation, No single patent, standard, or existing solution covers the full range of ACTIVE PCP requirements, and significant opportunities remain for the development of lightweight, interoperable, and digitally connected PPE solutions capable of supporting real-time situational awareness and multi-hazard protection. Addressing these gaps is essential for meeting the innovation objectives pursued within the ACTIVE PCP initiative.

### Market Mapping Preliminary Results

Complementing the patent analysis, a structured market mapping exercise was conducted to systematically profile the supply landscape across four dimensions: suppliers, solutions, technology domains, and relevant EU-funded projects.

A total of 67 suppliers were identified and mapped, comprising 44 EU-based companies and 23 international players. Of these, 44 are large companies, 23 are SMEs, and 1 is a startup. Supplier coverage across the six ACTIVE PCP protection areas reveals an uneven distribution: mechanical and physical protection is the most represented area (49 suppliers), followed by heat and fire protection (47) and chemical substances (43), while biological (17) and radiological/nuclear (12) protection remain substantially less served by the current market.

At the solution level, 101 products and systems were profiled in detail. The large majority - 90 out of 101 - are commercially available or near-commercial (TRL 9), while only 10 solutions reached the level of advanced prototypes or field-validated systems. This concentration at high TRL confirms that the market offers a mature base for individual components but falls short of integrated multi-hazard systems.

The technology mapping identified 34 technologies across 8 thematic domains: Advanced Materials, Integrated Sensors, Smart/Connected PPE, Detection Technology, Decontamination, Digital & Command Systems, Human Augmentation, and Sustainability & Lifecycle. TRL ranges vary considerably across domains - from early-stage research (TRL 4) to full commercial maturity (TRL 9) - with emerging areas such as Human Augmentation and integrated wearable sensors still concentrated at lower readiness levels.

A review of 25 relevant EU-funded projects (from Horizon 2020 and Horizon Europe) was also conducted. Of these, 8 were assessed as highly relevant to ACTIVE PCP, including projects such as TeamUP, PROACTIVE, CHIMERA, and iProcureSecurity PCP, which address CBRNe PPE effectiveness, procurement methodology, and end-user co-design. The remaining projects provide medium-level relevance in areas such as training, detection, and biological threat preparedness.

Finally, the preliminary Innovation Gap Analysis synthesised these findings into 9 identified gaps spanning all six protection areas. Two gaps were assessed as critical priority - relating to multi-hazard chemical/thermal ensemble certification and the integration of smart sensor layers into certified fire PPE - while five further gaps were rated as high priority, including embedded chemical detection, biometric monitoring integration, and decontamination interoperability. These gaps confirm that addressing these gaps is essential for meeting the innovation objectives pursued within the ACTIVE PCP initiative.

## 6 Call for Tender

**Table 3: Preliminary Call for Tenders Information**

Topic	Details
Tentative Launch	July 2026
Submission	Online Portal
Proposal Sections	<ul style="list-style-type: none"> <li>• Administrative</li> <li>• Technical</li> <li>• Financial</li> </ul>
Official Language	English
Eligibility Criteria	<ul style="list-style-type: none"> <li>• Open to all types of operators (companies or other types of legal entities) regardless of their size or governance structure.</li> <li>• Single entity or joint tender offer (consortia)</li> <li>• The organisation or consortia of organisations must be able to cover all the requirements unless stated otherwise.</li> </ul>
Evaluation Criteria	<ul style="list-style-type: none"> <li>• Exclusion, Selection, Compliance and Award criteria are yet to be developed.</li> <li>• Quality-price ratio will put a focus on quality.</li> </ul>

## Annex I - Request for Information (RFI) questionnaire

### ACTIVE PCP: Pre-Commercial Procurement of Innovative Personal Protective Equipment for First Responders Equipment

This questionnaire is part of the Open Market Consultation (OMC) of the ACTIVE PCP project. The purpose of this survey is to gather input from technology providers on the **state of the art**, **technological maturity** and **feasibility** of innovative solutions relevant to the scope of ACTIVE PCP, which focuses on addressing critical gaps in personal protective equipment (PPE) for first responders facing increasingly complex threats, whether man-made or natural. The information collected through this questionnaire will support the ACTIVE PCP Public Buyers Group in better understanding market capabilities and limitations and will be taken into account when preparing the tender documents for the future Pre-Commercial Procurement (PCP).

The OMC document, to which this questionnaire is an annex, is available on the ACTIVE PCP project website: [www.activepcp.eu](http://www.activepcp.eu)

Technology providers are invited to complete one questionnaire per organisation and to answer the questions to the best of their knowledge. **The deadline for submitting responses is 20 May 2026, 17:00 CET.** Any updates, including possible deadline extensions, will be communicated via the ACTIVE PCP project website. Participation in this questionnaire is voluntary; it is not a prerequisite for participating in the future ACTIVE PCP, and it does not confer any advantage or disadvantage to any economic operator.

The ACTIVE PCP consortium will ensure transparency, openness and equal treatment of all market participants throughout the OMC process. All information provided through this questionnaire will be analysed, anonymised, aggregated and summarised, and the results will be published in English on the project website.

#### Section A – General Information

(\* mandatory question)

- \*Name of your organisation:
- \*Website:
- \*Email address:
- \*Type of organisation (multiple choice):

Start-up

[SME](#)

Large company

Public organisation

R&D institute / University

Other – \*Please specify: \_\_\_\_\_

- \*Field of activity:

- \* Headquarters country:
- \*Contact person name & email:

## SECTION B - ACTIVE PCP challenge, needs and key innovation areas

The ACTIVE PCP solutions will address critical shortcomings of Personal Protective Equipment (PPE) for first responders, aiming to enhance their safety, operational efficiency, and adaptability in the face of evolving threats, including Chemical, Biological, Radiological, Nuclear, and Explosive (CBRN-E) incidents. The project leverages the Pre-Commercial Procurement (PCP) approach to drive innovation in PPE, focusing on multi-hazard scenarios. The solutions should address the following key innovation areas:

➤ **Development of an “All-Hazard” Fabric Solution:** Comprehensive protection against a wide spectrum of CBRN-E hazards, including the key threats identified in the project:

a) CBRN Substances

b) Heat and thermal (e.g., fire, high temperature, steam, etc.)

c) Fluid Exposure (e.g., rain, floodings, sweat, oils, etc.)

d) Mechanical and Physical Violence Threats (e.g., abrasion, cutting, tearing, puncture)

e) Operational Barriers and Limitations

➤ **Real-Time Monitoring Integrated in PPE:** solutions to track responders' health and environmental hazard with secure data transmission

➤ **Enhanced Usability and Comfort Features:** Incorporating ergonomic designs, stretchable fabrics, and advanced ventilation for reduced heaviness and restrictiveness

➤ **Sustainable and Low-Maintenance Material:** Developing self-cleaning or antimicrobial properties to reduce decontamination efforts

➤ **Adaptive, Modular Design for Multi-Use and Portability:** Configurable for different roles with interchangeable protective layers for quick adaptation

➤ **Compliance with Emerging Standards and Regulatory Progress:** Complying with emerging EU regulations and certifications for cross-border use

➤ **Foster multi-stakeholder cooperation on a European level:** Enhancing interoperability across multi-stakeholder groups during joint operations.

The aim of this section of the questionnaire is to validate with market players the draft Innovation Areas and Needs prior to their publication in the Call for Tenders. To complete this section of the questionnaire, please have a look at the OMC Document.

- **\*Are the needs, key innovation areas and threats clear and feasible within the frame of ACTIVE PCP?**

Yes

No

- **\*Please explain your choice:** \_\_\_\_\_

- **\*Which types of hazards is your solution designed to protect against? (Select all that apply.)**

- Chemical agents
  - Toxic industrial chemicals
  - Biological hazards
  - Thermal hazards / fire exposure
  - Particulate contamination
- Mechanical / physical threats
- Combined / multi-hazard environments

- **\*Please describe the protection concept: \_\_\_\_\_**
- **\*Does your solution include mechanisms for adaptive or scalable protection depending on the detected hazard level?**

- Yes
- No

- **\*If yes, please describe: \_\_\_\_\_**
- **\*What is the expected operational duration of the PPE system under high-intensity intervention conditions?**

- Less than 30 minutes
- 30–60 minutes
- 1–2 hours
- More than 2 hours

- **\*Please describe the assumptions regarding environmental conditions: \_\_\_\_\_**
- **\*Does your proposed solution integrate sensors or monitoring systems? (Select all that apply.)**

- Chemical detection
- Environmental monitoring
- Physiological monitoring of the responder
- Location tracking
- None

- **\*Please briefly describe the functionality: \_\_\_\_\_**
- **\*What design strategies do you use to reduce heat stress and physiological burden on the wearer? (Please elaborate your response.)**
- **\*Has your solution been tested or evaluated with end-users (first responders)?**

- Yes
- No

- **\*If yes, please describe the type of testing or feedback received: \_\_\_\_\_**

- **\*What is the estimated preparation or donning time for the PPE system before deployment?**

- Less than 2 minutes
- 2–5 minutes
- 5–10 minutes
- More than 10 minutes

- **\*Does your solution support rapid decontamination and reuse?**

- Yes
- No

- **\*If yes, please describe the decontamination process:** \_\_\_\_\_
- **\*If you were to participate in the ACTIVE PCP upcoming Call for Tenders, please indicate your indicative time allocation (in months) for each of the following phases:** (Total should not exceed 21 months.)  
Phase 1: Solution Design (indicatively 4 months): \_\_\_\_\_  
Phase 2: Prototype Development (indicatively 10 months): \_\_\_\_\_  
Phase 3: Original Development and Testing (indicatively 7 months): \_\_\_\_\_
- **\*Please briefly justify your estimated time:** \_\_\_\_\_
- **\*If you were to participate in the ACTIVE PCP, please provide your indicative budget allocation (in EUR) per PCP phase:**

**Note:** Please be aware that there is a predefined budget allocation for this PCP project, and the total available budget will be divided across phases and participating contractors.

Phase 1: Solution Design (€): EUR 58.333,33 max. budget per contractor

Phase 2: Prototype Development (€): EUR 600.000 max. budget per contractor

Phase 3: Original Development and Testing(€): EUR 750.000 max. budget per contractor

- **\*Please briefly justify your estimated budget distribution:** \_\_\_\_\_

## Section B - Target Stakeholders

Firefighters and LEAs, first arriving at the scene, are the main target stakeholders of ACTIVE PCP.

- **\*Do you think it is feasible to target these organisations with the solution developed in ACTIVE PCP?**

- Yes
- No

- **Explain your choice:** \_\_\_\_\_

Other target stakeholders could be included such as Emergency Medical Services, External Emergency Communication Centres, and third-party developers [Ability to connect their applications with the solutions].

- **\*Do you miss any stakeholder(s)?**

- Yes

No

- **\*If yes, which one?** \_\_\_\_\_

**SECTION C - Challenges**

- **\*Could you indicate the complexity of the Key Threat Areas by ordering them as basic (1), intermediate (2), or advanced (3)?**

Key Threat	1	2	3
CBRN Substances			
Heat and thermal (e.g., fire, high temperature, steam, etc.)			
Fluid Exposure (e.g., rain, floodings, sweat, oils, etc.)			
Mechanical and Physical Violence (e.g., abrasion, cutting, tearing, puncture)			
Operational Barriers and Limitations			

**\*Which would be the biggest challenges to address in your view?**

- **\*Do you identify any technical, operational or organisational barriers, gaps or missing needs in relation to the scope and innovation needs highlighted in the OMC Document of ACTIVE PCP?**  
 Yes  
 No  
**\*(if yes) Please explain:**

**Non-functional, organisational and legal/regulatory considerations**

In parallel to the upcoming functional requirements, organisational, and legal/regulatory requirements will be identified in a systematic manner. Further to this, any sectoral and/or occupational codes of practice that may exist in the participating regions and/or service provider organisations will be identified. Results of the requirements analysis will build the basis for the development of a comprehensive and systematic requirements catalogue for inclusion in the Call for Tenders.

- **The ACTIVE PCP solution should be able to exchange information with the systems of the procurers during the pilot phase. As this is a challenging task, how can procurers support potential suppliers to accomplish this objective?**  
*> Open Question*
- **Do you think there are any specific limitations or barriers to the deployment of the envisaged solution on the market? \***

Yes

No

- **If yes, which ones?** \_\_\_\_\_

**SECTION D - Assessment of existing technologies**

A prior analysis is being conducted to confirm whether the identified needs are indeed "unmet". If the prior art analysis reveals that there are already solutions available on the market that can meet the aforementioned needs and fulfill the requirements that will be set in the upcoming period or they will already become available before it is possible to complete the planned procurement, then there is no more need for an innovation procurement.

To complete this section of the questionnaire, please have a look at the OMC Document.

- **\* Do you have a solution covering ALL ACTIVE PCP needs, key innovation areas and threats in FULL that is already available in the market?**

- Yes
- No
- Partially

- **\*Solution Details:**

- **Solution Name:** \_\_\_\_\_
- **Website:** \_\_\_\_\_
- **Briefly describe your solution:** > *Open Question*

- **\*If so, in which stage is your solution? Following [H2020 Technology Readiness Levels](#)**

TRL 1-3

TRL 4-6

TRL 7-9

- **\*Which of the following challenges are covered by your solution?**

- **Operational and Environmental Challenges:** Current PPE often fails to address unknown or emerging hazards, lacking adaptability to protect against threats like unfamiliar chemical or biological agents. For instance, CBRN-E resistant PPE may not withstand heat. Additionally, PPE must be portable for varied operational settings and requires extensive decontamination or disposal processes, increasing response delays and logistical demands.
- **Discomfort and Fit Issues:** Poorly fitting or uncomfortable PPE, particularly for female firefighters, can compromise protection and compliance. Ill-fitting gear may leave gaps, reducing effectiveness, while heavy, restrictive PPE limits movement, ventilation, and communication. Prolonged wear can cause irritation or rashes, further discouraging use and jeopardising safety, especially during extended operations.
- **Compliance and Usage Challenges:** Inconsistent PPE use due to discomfort, overconfidence, or poor hazard awareness increases risks. Responders may remove PPE during perceived "low-risk" tasks, while training gaps and improper fitting reduce effectiveness. Peer influence also affects compliance, especially in mixed teams where not all members wear full protective gear.
- **Reduced Mobility and Performance:** PPE often limits mobility and precision, hindering tasks requiring fine motor skills. Heavy, full-body gear can cause

overheating, fatigue, and reduced focus, especially in hot conditions, impacting response effectiveness during long shifts or extended incidents.

- [ ] **Maintenance and Durability:** Regular inspection, maintenance, and decontamination are crucial to keep PPE effective. Frequent use can cause wear, especially in gloves and helmets, while complex cleaning processes for items like respirators may be burdensome. Neglecting these tasks risks reduced functionality and contamination.

- **\*Do you think there is room for technological development beyond the state of the art?**

Yes

No

- **\*If yes, please explain:** \_\_\_\_\_
- **\*What are the main limitations of the current state of the art that your solution aims to address, and what improvements would it introduce compared to existing approaches?**
- **\*Do you rely on any patented technology or standards?**

**Note:** Regarding standards, please take into consideration the existing PPE standards and/or certification frameworks (e.g. EN, ISO, NFPA).

○  Yes

○  No

- **\*If yes, please list relevant patents or standards:** \_\_\_\_\_
- **\*Are there existing patents or intellectual property barriers that could limit your solution's development or deployment?**

Yes

No

- **\*If yes, please explain:** \_\_\_\_\_
- **\*Based on your market knowledge, what is the current market value of similar solutions, and what is your projection for the future market value of the proposed solution(s)? (Please justify your answer.)**

## SECTION E - Miscellaneous

- **Are you familiar with the concept of Pre-commercial Procurement of Innovation? \***

Yes

No

- **Would your organisation consider participating in the upcoming ACTIVE PCP procurement (tender) as a solution provider? (Select one.)\***

Yes, we would likely participate.

Maybe, we need more information/depends on conditions.

No, it is unlikely to participate.

- **If yes, do you intend to participate as a single entity or as part of a consortium?\***

Single entity

Consortium

N/A

- **\*Does your proposed solution support interoperability with other equipment used by first responders (e.g. SCBA systems, communication devices, sensors, body cameras)?**

Yes

No

- **\*If yes, please specify compatible systems or standards: \_\_\_\_\_**
- **\*What is the estimated manufacturing scalability of your solution?**

Small batch production

Medium-scale production

Large-scale industrial production

Please describe key manufacturing considerations: \_\_\_\_\_

- **\*What additional information, requirements or conditions would you need to make a good plan for the development and/or deployment of a solution to address the challenge of ACTIVE PCP?**
- **Do you have any final suggestions and/or remarks?**

### **Partner search**

Many PCP tenderers choose to apply together with international partners in a joint tender (consortium) to be able to fulfil all of the future tender requirements. So, if you are looking for potential partners to form a consortium or want to showcase your company so that other interested parties might contact you, have a look at the following [link](#), register your organisation and start networking!

### **PRIVACY STATEMENT**

Your personal data will be collected, processed, stored, and used by the ACTIVE PCP consortium solely for the purpose of gathering information from the market within the framework of the ACTIVE PCP project, including participation in the Open Market Consultation (OMC), the preparation of procurement documentation and the overall market analysis. Responses will be processed and analysed in anonymised form. No identifiable personal data will be shared beyond the ACTIVE PCP consortium or published in any way that could reveal the identity of respondents.

The processing of personal data is carried out in accordance with Regulation (EU) 2016/679 (GDPR), and where applicable, Regulation (EU) 2018/1725, as well as any other applicable European or national data protection legislation in force.

As a data subject, you have the right to:

- confirm;
- access your personal data;
- request rectification or deletion;
- restrict or object to processing;
- request data portability;
- and withdraw consent at any time, without affecting the lawfulness of processing carried out before withdrawal.

For further details on how your data is processed, please consult the ACTIVE PCP privacy policy: [\\_ Terms & Conditions - ACTIVE PCP](#)

To exercise your rights and if you have any questions regarding the use of your data or this questionnaire, please contact: [office@activepcp.eu](mailto:office@activepcp.eu)

I confirm that I have read and understood the above information, including the data protection and privacy notice, and I consent to the processing of my personal data for the purposes of the ACTIVE PCP project and this Open Market Consultation.

Yes

I consent to the processing of my personal data by ACTIVE PCP Consortium, acting on behalf of the ACTIVE PCP project, in accordance with the General Data Protection Regulation (GDPR), for the purpose of receiving information and updates about activities carried out within the ACTIVE PCP project.

Yes

#### **DISCLAIMER**

**READ CAREFULLY AND ACCEPT:** I understand that any of the OMC activities IS NOT a call for tenders, NOR a pre-qualification exercise, NOR the request of Expression of Interest; the participation to the OMC of ACTIVE PCP does not oblige any project partner(s) to enter a contractual agreement with any interested party; any public procurement procedure will be conducted separately with an open and advertised public procurement procedure.

***Thank you for completing the questionnaire!***