

Description	Sub-function	Need	Phase in security cycle				Field				Requirements	EU CBRN Action Plan		
			Prev	Prep	Res	Rec	C	B	RN	E			Med.	
RISK ASSESSMENT AND REDUCTION	Risk Reduction	There is a need for a development of tools and strategies for detection of improvised CBRNe devices and their production facilities.	X	X	X		X	X	X	X			Intuitive and flexible tools and strategies that will provide faster and reliable detection of improvised CBRNe devices and their production facilities	EU CBRN Action Plan (1)Reducing the accessibility of CBRN materials, (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
SEARCH AND DETECTION	Devices for detection and identification	There is a need to built a device which allow to detect contamination from different variety of materials (steel, concrete, wood frame, synthetically materials, rugged materials) and different conditions: under wet conditions, underwater and maritime environment, direct flame contact, thermal radiation) including stand-off devices for detection from surfaces. The added value of the system will be capability of detecting residual contamination after decontamination.			X	X	X	X	X				Improved detection system that will detect contamination from a different variety of materials (steel, concrete, wood frame, synthetically materials, rugged materials) and that will operate under all environmental conditions (e.f wet, underwater, direct flame)including new stand-off devices for detection from surfaces. Potential solutions should: <ul style="list-style-type: none"> • detect and identify contamination from different materials, including stand off detection; • provide information on detected CBRN agents; • transmit contamination data to authorized personnel; • be designed to minimize equipment burdens for the responder, while maintaining interoperability of components; • be easy to operate, calibrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • operate within multiple environments; • be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
SEARCH AND DETECTION	Devices for detection and identification	There is a need for smaller, cheaper, lighter and fieldable systems for sampling and/or detection and identification, which would be either/both person-borne or/and mounted on robots or drones. Such systems should potentially allow to fulfil all requirements needed to carry out CBRNe forensic investigation. For such systems smart materials should be developed, which would provide better and integrated CBRN functions, less burden, built-in detection etc.			X		X	X	X	X			Smaller, cheaper, lighter and fieldable systems for sampling and/or detection and identification, which would be either/both person-borne or/and mounted on robots or drones. Such systems should potentially allow to fulfill all requirements needed to carry out CBRNe forensic investigation. For such systems smart materials should be developed, which would provide better and integrated CBRN functions, less burden, built-in detection etc. Potential solutions should: <ul style="list-style-type: none"> • Be compatible with forensic procedures • Provide sampling and or detection and identification • Have built in detection and identification; • Provide geolocation of forensic data • transmit data to authorized personnel; • be designed to minimize equipment burdens for the responder, while maintaining interoperability of components; • be easy to operate, calibrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • operate within multiple environments; • be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
SEARCH AND DETECTION	Devices for detection and identification	There is a need to develop systems for fast detection and identification of biological hazards (such as B agents, toxins, synthetic biology threats) on the scene of incident. Such systems should allow to improve response on CBRN actions regarding biological hazards, increase safety of rescuers and endangered people, as well as reduce costs of single biological operation.			X			X					Faster detection and identification of biological hazards (such as B agents, toxins, synthetic biology threats) at the scene of incident. Such systems should allow to improve response on CBRN actions regarding biological hazards, increase safety of rescuers and endangered people, as well as reduce costs of single biological operations Potential solutions should detect, assess, and monitor active threats on the incident scene and should: <ul style="list-style-type: none"> • detect and identify emerging threats and hazards; • provide information on detected B agents; • allow responders to identify and designate the location (geolocate) of threats and hazards; • continuously monitor the status of identified threats and hazards on the incident scene; • display threat and hazard data in a manner that is designed to minimize distraction and cognitive failure; • generate an alert when active and passive threats and hazards are detected or evolve, based on agency-configured thresholds or parameters; • transmit threat and hazard data to authorized personnel; • be designed to minimize equipment burdens for the responder, while maintaining interoperability of components; • use a non-proprietary power source that provides sufficient power for an operational period; • be easy to operate, calibrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • operate within multiple environments; • be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
SEARCH AND DETECTION	Buildings/infrastructures	There is a need of development of multipurpose CBRN threats detectors embedded in the buildings. There should be set a standardisation and validation of this kind of detectors, with a low level of false results. This kind of detectors should be connected to the net and give information about a level and area of contamination. This kind of tools should provide a complex CBRNE protection against threats. Moreover, buildings should be constructed to survive small explosion/blast.	X	X	X		X	X	X	X			Development of multipurpose CBRN threats detectors that could be embedded in buildings and critical infrastructure, transport systems <ul style="list-style-type: none"> • There should be set a standardisation and validation of this kind of detectors, with a low false alarm rate • detect and identification of CBRN threats • identify and designate the location (geolocate) of threats and hazards and contamination; • display threat and hazard data in a manner that is designed to minimize distraction and cognitive failure; • generate an alert when active and passive threats and hazards are detected or evolve, based on agency-configured thresholds or parameters; • transmit threat and hazard data to authorized personnel in real time; • be easy to operate, calibrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • operate within multiple environments; • be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
IDENTIFICATION AND AUTHENTICATION	CBRN identification	Improved detection and identification of concealed (small containers, bottles, boxes) dangerous materials (CBe) at the critical infrastructure (airports, railway stations) or public use facilities.			X		X	X		X			Potential solutions should detect, assess, and monitor active threats on the incident scene and should: <ul style="list-style-type: none"> • detect and identify concealed hazards • provide information on detected CBRNe agents; • allow responders to identify and designate the location (geolocate) of threats and hazards; • display threat and hazard data in a manner that is designed to minimize distraction and cognitive failure; • generate an alert when active and passive threats and hazards are detected or evolve, based on agency-configured thresholds or parameters; • transmit threat and hazard data to authorized personnel; • be designed to minimize equipment burdens for the responder, while maintaining interoperability of components; • use a non-proprietary power source that provides sufficient power for an operational period; • be easy to operate, calibrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • operate within multiple environments; • be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
SITUATION AWARENESS & ASSESSMENT	Situation Assessment	There is a need for improved information gathering in real time for all forces that is managed, secure, prioritised and tailored to the role and force, supported by improved on scene command decision support.		X	X		X	X	X	X			<ul style="list-style-type: none"> • Robust, intuitive, reliable and suitable for the operating environment. • Adaptive flexible, and intelligent tactical command toolkit. • Adaptive, flexible information management system for Joint Operational Picture. • Needs to be able to be easily updated with new threats, procedures etc. • Should be easy to operate and maintain throughout the service life. • Should integrate or be compatible with existing service solutions. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
INTERVENTION AND NEUTRALIZATION	Medical countermeasures	There is a need to develop faster tests based on investigations of symptoms, body fluids, breath etc. which will allow to determine whether person was exposed to CBRN agents. There is a need for convenient and accurate point-of-care diagnostic tools that can be used in a non-invasive manner.		X	X		X	X	X		X		<ul style="list-style-type: none"> • Potential solutions should detect, assess, and monitor active threats on the incident scene and should: • provide faster tests to determine whether a person has been exposed to CBRN agents; • provide information on the detected agents; • Be a convenient and accurate point of care diagnostic tool that is non invasive • be designed to minimize equipment burdens for the responder, while maintaining interoperability of components • be easy to operate, calibrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • operate within multiple environments; • be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,
SUPPORT	Ground systems technology	There is a need to develop UGV/UAV platforms and dedicated sampling tools for UGV/UAV platforms for collection of CBRNe samples or CBRNe contaminated samples including samples of traditional forensic traces and CBRN traces in case of a CBRN forensic investigation. The issues related to the development of the radiation resistant equipment and specific parts of unmanned platforms for handling RN sources in terms of disposal should be taken into consideration.		X	X		X	X	X	X			<ul style="list-style-type: none"> • The solutions should provide multi-purpose UGV/UAV platforms with dedicated sampling tools for the collection of CBRNe samples or CBRNe contaminated samples including samples of traditional forensic traces and CBRN traces in case of a CBRN forensic investigation. • The issues related to the development of the radiation resistant equipment and specific parts of unmanned platforms for handling RN sources in terms of disposal should be taken into consideration. • The solutions should be compatible with Standard Operating procedures • Be designed to minimize equipment burdens for the responder, while maintaining interoperability of components • Be easy to operate, callbrate, and maintain throughout the service life; integrate with existing data sets, model outputs, and emergency response software systems to remotely capture and monitor hazard-related data in multiple topographies; • Operate within multiple environments; • Be designed to minimize price of system, consumables, and maintenance. 	EU CBRN Action Plan (2)Ensuring a more robust preparedness for and response to CBRN security incidents,