



D5.2

Strategic Capacity Development for HILP

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Authors: Vlatko Jovanovski, Marc Arnold, Federico Orangi, Dr.Albrecht Beck

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Abstract

This deliverable presents a strategic framework for capacity development to enhance preparedness for High-Impact, Low-Probability (HILP) events. Building on the evidence generated through the AGILE project, it adopts a risk-agnostic, function-oriented approach that emphasises the preservation of critical societal functions under conditions of uncertainty, cascading disruption, and degraded operating environments. The report distinguishes between capacity, capability, and capacity development, and examines capacity needs across systemic, organisational, and individual levels. It develops a competency-based framework organised around four core domains: cognitive, operational, technical and continuity, and communicative competencies, supported by cross-cutting themes of adaptation, cross-sector collaboration, and continuous learning. Finally, the deliverable translates these competencies into a pilot training architecture designed to strengthen adaptive readiness through practical, evidence-based learning activities. The framework provides a foundation for supporting organisations in developing resilient capabilities that enable coordinated, flexible, and effective action during HILP events.

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Nature of the deliverable¹

R

Dissemination level

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SEN	Sensitive, limited under the conditions of the Grant Agreement	
CL	Classified information under the Commission Decision No2015/444	

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¹ Deliverable types:

R: document, report (excluding periodic and final reports).

DEM: demonstrator, pilot, prototype, plan designs.

DEC: websites, patent filings, press and media actions, videos, etc.

OTHER: software, technical diagrams, etc.

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Abbreviations

Table 1. List of abbreviations.

Abbreviation	Full term
AGILE	AGnostic Risk Management for High Impact Low Probability Events
COP	Common Operational Picture
COOP	Continuity of Operations
DRM	Disaster Risk Management
EOC	Emergency Operations Centre
EU	European Union
GA	Grant Agreement
GIS	Geographic Information System
HILP	High-Impact, Low-Probability
ICT	Information and Communication Technology
JRC	Joint Research Centre
KPI	Key Performance Indicator
PPE	Personal Protective Equipment
SME	Subject Matter Expert
SOP	Standard Operating Procedure
TTX	Tabletop Exercise
UKRI	United Kingdom Research and Innovation
UNDRR	United Nations Office for Disaster Risk Reduction
WP	Work Package
WP5	Work Package 5 – Planning Uptake, Capacity Development and Communication
D5.1	Deliverable 5.1 – Evidence-Based Planning Framework
D5.2	Deliverable 5.2 – Strategic Capacity Development for HILP
D5.3	Deliverable 5.3 – Guidelines on Current Risk Communication for HILP

1. Executive Summary

This deliverable examines what kinds of capacities are required for preparedness under High-Impact, Low-Probability (HILP) conditions and how these can be translated into practical capability development. It argues that HILP preparedness should move beyond hazard-specific planning and instead focus on whether essential functions can continue under uncertainty, cascading disruption, and degraded operating conditions. In this perspective, preparedness is defined less by the ability to predict a particular shock and more by the ability of systems, organisations, and individuals to adapt and function when normal assumptions no longer hold.

A central argument of the deliverable is the **distinction between capacity, capability, and capacity development**. Capacity refers to the resources and structures available for crisis response, capability refers to the ability to mobilise and adapt those resources effectively, and capacity development refers to the longer-term process of strengthening both over time. The document stresses that in HILP contexts, resources alone are insufficient unless actors can coordinate, make decisions, and preserve functionality under stress.

On this basis, the deliverable develops a **competency-based framework for HILP preparedness**. The framework is organised into four core domains: **cognitive, operational, technical and continuity, and communicative competencies**. Across these domains, the framework highlights capacities such as systemic sensemaking, prioritisation under uncertainty, adaptive coordination, leadership in emergency mode, continuity under degraded infrastructure, communication clarity, uncertainty communication, and trust-sensitive communication. It also identifies three cross-cutting themes: adaptation rather than compliance, cross-sector orientation, and learning and reflective practice.

The deliverable then translates this framework into a **pilot training architecture** designed to strengthen adaptive readiness in practice. The pilot is structured around four modules and an integrated exercise covering sensemaking and prioritisation, communication and coordination, continuity of critical functions, and adaptive coordination and role-based response. Its purpose is not to duplicate AGILE stress testing, but to provide a practical learning environment in which identified competencies can be rehearsed, observed, and refined.

Overall, the deliverable shows that HILP readiness depends not only on assets or plans, but on the integrated ability to preserve essential functions, coordinate across boundaries, communicate meaningfully, and adapt under demanding and uncertain conditions. In this way, it contributes to the wider WP5 objective of ensuring that AGILE evidence is translated into practical preparedness, capability development, and organisational learning.

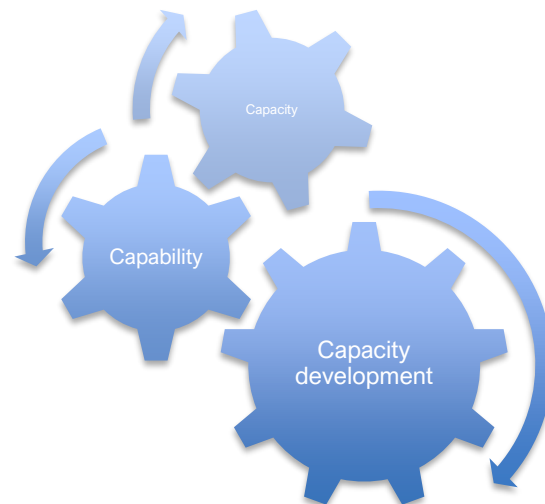
2. Understanding Capacity Requirements in HILP Context

Preparing for High-Impact, Low-Probability (HILP) events requires a different mindset from conventional preparedness. These events are rare, difficult to anticipate, and often unfold in ways that exceed normal planning assumptions. Their most serious consequences usually come not only from the triggering event itself, but from the way disruption spreads across connected systems. For that reason, preparedness should focus less on getting ready to respond to a specific hazard and more on ensuring that critical societal functions can continue when multiple systems are under severe stress. Capacity needs should therefore be understood in relation to functionality under disruption, not only in relation to the likelihood of a particular threat.

A useful starting point is to distinguish between capacity, capability, and capacity development. **Capacity refers to the resources, structures, and assets** that can be mobilised in a crisis, such as personnel, plans, equipment, infrastructure, governance arrangements, data systems, and logistical support. **Capability refers to the ability to mobilise, adapt, and coordinate those resources effectively** when disruption occurs. This distinction is especially important in HILP contexts, where having resources in place does not guarantee effective action. Organisations may have plans, staff, or technical tools and still fail if they cannot coordinate across boundaries, operate under degraded conditions, or make timely decisions when information is incomplete. **Capacity development is the longer-term process through which individuals, organisations, and systems build, strengthen, adapt, and sustain both capacity and capability** over time. It is therefore more than training or procurement alone; it is a continuing effort to strengthen the conditions for resilient action.

This distinction has major implications for preparedness. Traditional approaches often emphasise hazard-specific readiness, for example, flood plans for flooding, cyber protocols for cyber incidents, or pandemic measures for public health emergencies. Such approaches remain useful, but they are not sufficient when events are unfamiliar, overlapping, or far outside normal planning assumptions. In HILP contexts, severe impacts often result from cascading disruption: power failure may disable communications, communications failure may weaken emergency coordination, and fuel shortages may affect healthcare, logistics, and public order. Understanding capacity needs therefore requires attention not only to specific hazards, but also to shared vulnerabilities, common failure points, and the continuity of critical functions regardless of cause.

For this reason, **D5.2 adopts a risk-agnostic, function-oriented perspective**. This does not mean ignoring hazards or replacing hazard-specific expertise. Rather, it means organising preparedness around the ability to preserve core functions under uncertainty, regardless of what initiated the crisis. The key operational question is not only what caused the disruption, but whether systems can continue to function when electricity, digital infrastructure, transport, or governance mechanisms are compromised. A blackout, a communications breakdown, or a supply-chain failure may stem from different causes while producing similar operational challenges. Capacity needs should therefore be defined in terms of impact and functionality: what is required to maintain essential services, coordinate action, and adapt under degraded conditions?



Key distinction: Having resources available does not imply having the ability in place to use them effectively. Capacity development strengthens both over time

2.1. Three levels of capacity development

In D5.2, capacity development is understood across three interacting levels: **systemic, organisational, and individual**. These levels are analytically distinct but mutually dependent. Effective HILP preparedness requires attention to all three.

At the systemic level, capacity development concerns the wider architecture within which crisis response takes place. HILP events expose the fragility of interdependent socio-technical systems, making it essential to understand how critical infrastructures, service chains, information flows, and decision structures interact. **Capacity at this level includes the ability to identify shared points of failure, map dependencies across sectors, maintain critical services in degraded environments, and prevent local disruption from escalating into wider system breakdown.** It also includes governance capacities such as cross-sector coordination, data-sharing arrangements, and decision-making frameworks that remain functional under uncertainty. In practical terms, this means that institutions need more than technical assets alone: they also need systemic situational awareness, continuity planning, resilient communication arrangements, and governance mechanisms that support coherent action across multiple actors and scales.

At the organisational level, capacity development concerns the way institutions and operational actors translate available resources into action. **The central question is not simply whether organisations have staff, equipment, or procedures, but whether they can use them effectively when conditions deteriorate.** This includes interoperable communication systems, continuity-of-operations planning, role clarity, adaptive decision structures, and mechanisms for collaboration across agencies and sectors. It also includes the ability to learn and adjust through stress-testing, simulation, and iterative review. Organisational preparedness for HILP conditions therefore depends on more than compliance or procedural completeness. It depends on whether institutions can remain coherent, flexible, and responsive when standard workflows are interrupted and the crisis evolves rapidly.

At the individual level, capacity development is closely linked to **adaptive performance**. HILP events place exceptional demands on decision-makers and responders because they unfold in conditions of ambiguity, competing priorities, incomplete data, and rapid change. Under those conditions, technical expertise remains important but is not enough on its own. Individuals also need cognitive and operational competencies such as tolerance for ambiguity, decision-making

under uncertainty, systemic thinking, information triage, communication resilience, and the ability to function when digital tools or centralised coordination are unavailable. Particularly important is the ability to recognise interdependencies across systems and to act in ways that preserve critical functions rather than simply follow routine procedures. In HILP contexts, the most valuable actor is often not the person who knows the most detailed rules, but the person who can interpret changing conditions, understand wider consequences, and respond flexibly when the expected script no longer applies.

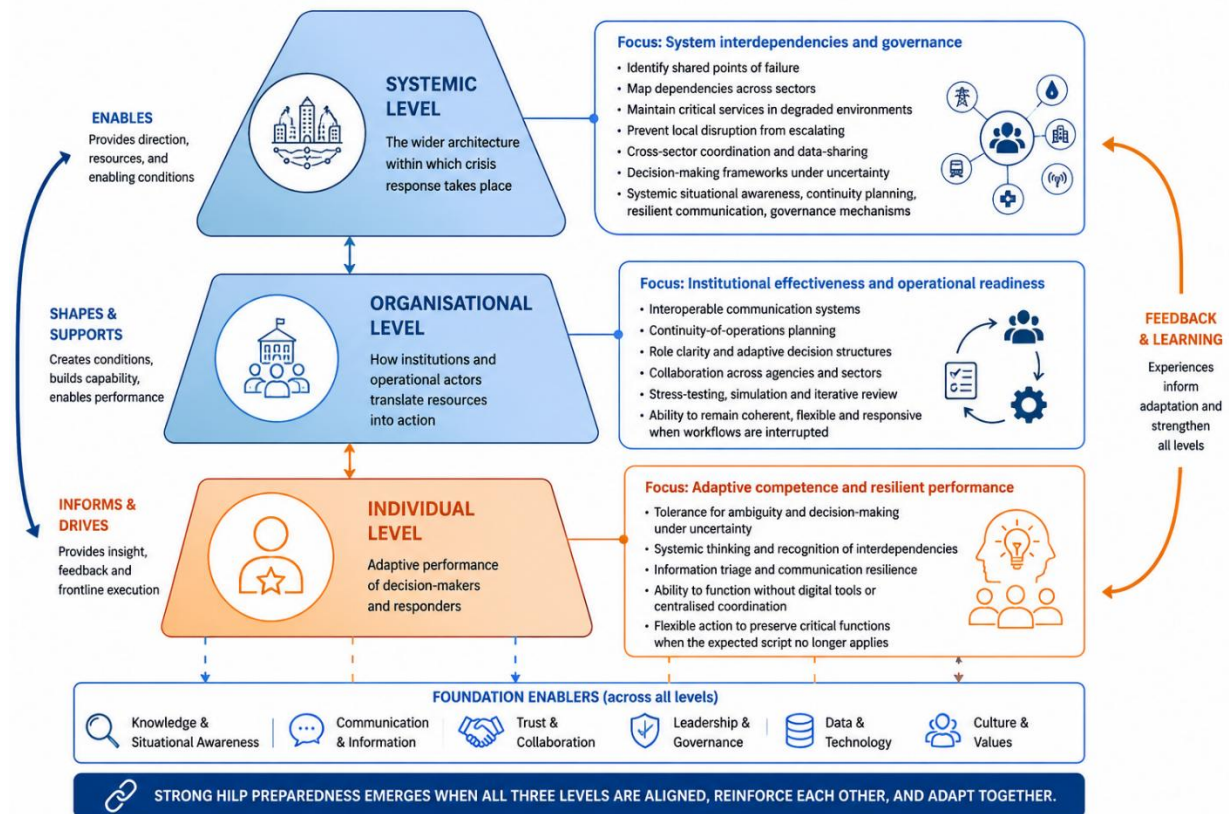


Figure 1. Three levels of capacity development diagram

2.2. Key concepts for HILP capacity development

A central concept linking these three levels is **flexibility**. In HILP contexts, flexibility is both a structural property of systems and a functional quality of action. Structurally, it appears in redundancy, modularity, distributed arrangements, alternative communication channels, and diversified supply options. Functionally, it appears in the ability of actors and organisations to reconfigure resources, shift roles, adapt plans, and sustain operations in real time. Both dimensions matter. **Systems may contain latent flexibility, but that flexibility only becomes useful if people and organisations are able to activate it under pressure.** Understanding capacity needs therefore requires attention both to enabling structures and to the ability to use them in practice.

This also highlights the importance of adaptive governance and decentralised action. Under HILP conditions, centralised command structures may become overloaded, disconnected, or too slow to respond effectively. **Capacity development should therefore include decision-making models that allow authority to move toward the level where the most relevant information and expertise are available.** This does not eliminate hierarchy, but it does require support systems to become more fluid under stress. It also underscores the value of improvisational capacity: the ability to recombine available resources, knowledge, and networks to restore or maintain functionality when standard tools and procedures are no longer sufficient. **Resilient**

capacity is therefore not only planned capacity; it is also the capacity to adapt, improvise, and coordinate across institutional boundaries without losing coherence of purpose.

A further implication concerns **creativity and innovation**. In HILP contexts, lateral thinking can help organisations anticipate unusual disruptors, understand impacts across sectors and supply chains, and identify practical solutions under constrained conditions. Evidence shows that organisations often neglect the development of human capacity for creativity and innovation, focusing instead on processes, compliance and tools. Yet innovative capacity matters because, without it, rising demands can simply translate into heavier burdens on already stretched staff. Building innovative capacity also requires environments in which ideas can be explored and tested without premature judgement, as well as diversity of background and thinking style. **Leadership** is especially important here., D5.2 argues that leadership often matters more than budget in creating the vision, organisational culture, and freedom that enable experimentation and innovation.

These points lead directly to the **importance of training and learning systems**. If HILP preparedness depends on adaptive capacity, flexibility, and innovation, then training cannot remain limited to lecture-based or hazard-specific formats. Instead, capacity development should be linked to learning environments that cultivate systemic awareness, flexibility, and operational judgement under stress. D5.2 therefore points toward greater use of stress-testing, scenario-based exercises, degraded-environment drills, decision-making simulations, and other methods that expose participants to ambiguity, failure, and interdependency. **Such methods do not merely test preparedness; they help develop the competencies that HILP conditions require.** Identifying capacity needs therefore also means identifying where current training approaches are insufficient and where more experiential, cross-sectoral, and uncertainty-oriented methods are needed.

Ultimately, these points suggest that capacity needs for HILP events should be understood as the human, organisational, institutional, and systemic requirements needed to preserve essential functions, coordinate action, and adapt under uncertainty, cascading disruption, and degraded operating conditions. This framing moves beyond a narrow focus on assets or technical shortfalls and instead treats capacity development as a strategic effort to strengthen resilient functioning across multiple levels. In that sense, preparedness for HILP events is not primarily about predicting every possible shock. It is about ensuring that systems and actors can absorb disruption, adapt in real time, and recover without catastrophic loss of function.

3. Competency Based Framework for HILP Preparedness

3.1. Purpose and Role of the Competency Framework

This chapter presents a competency-based framework for HILP preparedness that translates recurring evidence into a practical structure for development. Its purpose is to **identify the capacities that individuals, teams, and organisations need to preserve critical functions, coordinate action, and adapt under conditions of uncertainty, cascading disruption, and degraded operating environments.** In that sense, the framework gives operational form to the wider argument of D5.2: preparedness depends not only on what organisations possess, but on whether they can mobilise, adapt, and coordinate available resources when routine assumptions no longer hold.

The framework also serves a translational function within WP5. D5.1 positions WP5 as the planning uptake layer of AGILE and argues that evidence from stress tests, historical cases, expert

judgement, and operational lessons should be converted into practical planning, communication, and capacity-building action rather than remaining as isolated findings. Within that logic, D5.1's "Training Needs from Evidence" tool identifies recurring capability areas such as situational awareness, decision-making under pressure, leadership in emergency mode, multi-agency coordination, communication and public information, continuity under degraded conditions, support for vulnerable groups, and cross-sector systems thinking. The present framework builds directly on that logic by organising those needs into a coherent competency model that can support both analysis and training design.

The framework also complements D5.3. That deliverable shows that HILP communication should support understanding, preparedness, protective action, trust, recovery, and learning before, during, and after a crisis, and that communication must be actionable, inclusive, coordinated, and transparent about uncertainty. Communication-related competencies are therefore not peripheral; they are a central part of HILP readiness and are embedded throughout the framework presented here. In that sense, Chapter 2 functions as a bridge between capacity development and communication readiness within WP5.

Finally, this chapter provides the conceptual basis for the pilot training developed in Chapter 3. The pilot is intended to be competency-based rather than hazard-based, and its architecture depends on a clear account of what capacities matter and why. Chapter 2 therefore does more than classify competencies. It establishes the logic through which AGILE evidence is translated into practical readiness requirements.

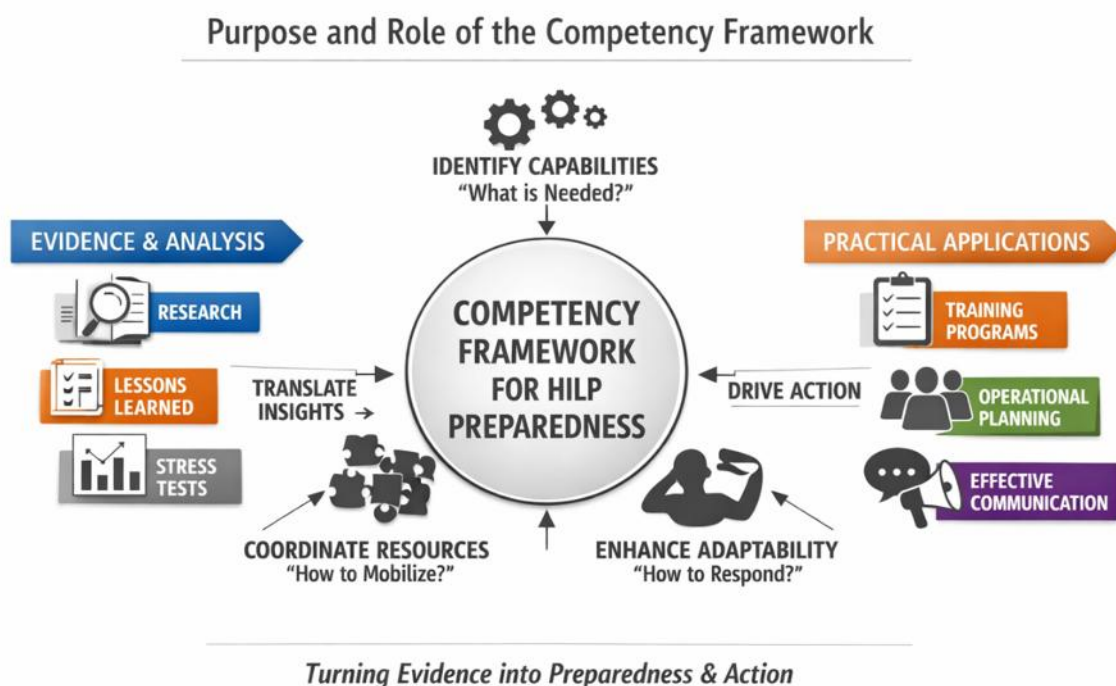


Figure 2. Purpose and role of the competency framework

3.2. Evidence Base and Framing

The competency framework is derived from **four overlapping evidence streams**.

First, it draws on the **conceptual and strategic logic developed in this deliverable**, especially the argument that HILP preparedness requires a shift from hazard-specific planning toward risk-agnostic, function-oriented readiness, and that capacity needs must be considered across systemic, organisational, and individual levels.

Second, it draws on D5.1's treatment of capacity building and adaptive readiness. D5.1 argues that organisations need a **"training for the unexpected"** mindset and identifies **adaptive readiness** as including decision-making under uncertainty, managing stress, communication under pressure, collaborative problem-solving, situational awareness, and rapid adaptation when existing plans no longer apply. It also proposes a structured tool for translating evidence into training needs and intervention choices. These elements provide a direct basis for the competency logic developed here.

Third, the framework is informed by D5.3's synthesis of HILP communication evidence. D5.3 shows that communication effectiveness depends on actionability, trust, inclusion, communication of uncertainty, layered channels, audience adaptation, and the ability to support understanding and protective action across preparedness, response, recovery, and learning. These findings are important because they show that **communication competence** in HILP contexts involves more than transmitting messages. It also involves information triage, communication under degraded conditions, and alignment between communication and audience needs and capabilities.

Fourth, the framework is grounded in recurring **findings from completed AGILE stress-test activities and associated implementation feedback**. Across completed stress-test cases, electricity repeatedly emerged as a foundational point of failure, with cascading effects on water, healthcare, communications, mobility, logistics, fuel access, and wider governance capacity. Communication fragility and degraded coordination also appeared repeatedly, including overload of official channels, limited analogue fallback, difficulty maintaining a trusted operational picture, and risks of confusion or misinformation when systems are disrupted. The same activities also highlighted mobility bottlenecks, health-system fragility, supply-chain and fuel dependence, and governance difficulties under compound disruption. Taken together, these recurring patterns point to a set of capability demands that cut across local contexts and scenarios and support a competency-based rather than hazard-specific approach.



Table 2 provides a traceability overview showing how recurring evidence generated through AGILE informs the capability demands identified in D5.2, how those demands are organised into competency domains, and how they are translated into the pilot training architecture.

Table 2. Traceability of AGILE evidence to capability demands, competency domains and training modules

Recurring AGILE evidence	Capability demand	Competency domain	Training module / activity
Electricity as a foundational failure point, with cascade effects	Recognize critical dependencies and cascade effects	Technical and Continuity Competencies	Module C – Continuity of Critical Functions Focus on dependencies, continuity thresholds, and fallback arrangements
Communication fragility and degraded coordination	Triage information and communicate clearly under overload	Communicative Competencies + Operational coordination	Module B – Communication and Coordination Operationalized through communication tasks, coordination prompts, and degraded-channel work
Mobility bottlenecks and access constraints under disruption	Understand continuity impacts of disrupted movement	Technical and Continuity + Operational Competencies	Primarily Module C, supported by Module D Links continuity decisions with coordination under disruption
Health-system fragility under compound disruption	Identify essential functions and reduced service levels	Technical and Continuity + Cognitive Competencies	Module C, supported by Module A Connects continuity thresholds with prioritisation under pressure
Supply-chain and fuel dependence as recurring pressures	Recognise enabling-system dependencies and knock-on effects	Technical and Continuity Competencies	Module C – Continuity of Critical Functions
Governance difficulties under compound disruption	Simplify priorities and shorten decision paths	Operational Competencies + Cognitive support	Module D, supported by Module A



Ambiguity, incomplete information, competing priorities	Form a shared operational picture and act without full certainty	Cognitive Competencies	Module A – Systemic Sensemaking and Prioritisation
Need for cross-sector and multi-level preparedness	Work across organisational and sectoral boundaries	Operational Competencies + cross-cutting themes	Module D + Integrated Exercise

3.3. Design Logic of the Framework

The framework is built on **five design principles**.

First, it is **risk-agnostic and function-oriented**. Competencies are defined in relation to preserving essential functions and enabling adaptive action under disruption, not in relation to mastery of one initiating hazard. This follows directly from the wider logic of D5.2 and D5.1, both of which argue that HILP preparedness should be organised around system behaviour, continuity, dependencies, and the capacity to function under stress rather than around a narrow hazard script.

Second, it is **evidence-derived** rather than hypothetical. The framework is based on recurrent vulnerabilities, and capability demands observed across AGILE stress-test evidence, especially in relation to power dependence, communication degradation, mobility bottlenecks, continuity stress, governance friction, and human-resource strain. This means it is grounded in recurring patterns of pressure rather than abstract categories alone.

Third, it is **multi-level**. The framework is intended to support capability development across strategic, tactical, and operational levels. D5.1 explicitly notes that these levels are often trained in silos and that this weakens preparedness for cascading crises. The framework therefore includes capacities related to leadership, coordination, operational continuity, and communication across different levels rather than assigning readiness to only one layer.

Fourth, it **integrates communication** within and out. D5.3 makes clear that communication is inseparable from understanding, action, trust, and recovery in HILP events, while D5.1 identifies communication and public information as a capability area as well. The framework therefore embeds communication capacities not only in one dedicated domain, but also across sensemaking, continuity, and coordination.

Fifth, it is **practice-oriented**. The framework is intended to support training, exercise design, and capability development, not simply conceptual classification. Each domain is therefore defined in terms of what actors need to be able to do in practice under HILP conditions. This aligns with D5.1's "Training Needs from Evidence" logic, which asks what limitation exists, what behaviour is needed, and what kind of intervention should strengthen it.

3.4. Core Competency Domains

The framework presented in this section is visually synthesised in Figure 3, which brings together the four core competency domains into a single integrated model for HILP readiness. Rather than treating cognitive, operational, technical and continuity, and communicative competencies as discrete or sequential categories, the figure emphasises their interdependence within real-world preparedness contexts. Figure 3 also illustrates how cognitive competencies underpin sensemaking and prioritisation, how operational competencies translate decisions into coordinated action, how technical and continuity competencies sustain essential functions under degraded conditions, and how communicative competencies enable shared understanding, trust, and coordinated response across systems and stakeholders. It therefore offers a broad overview of the structure of the framework, emphasising that effective HILP preparedness is a function of interaction between the domains, not any one competency area in isolation.

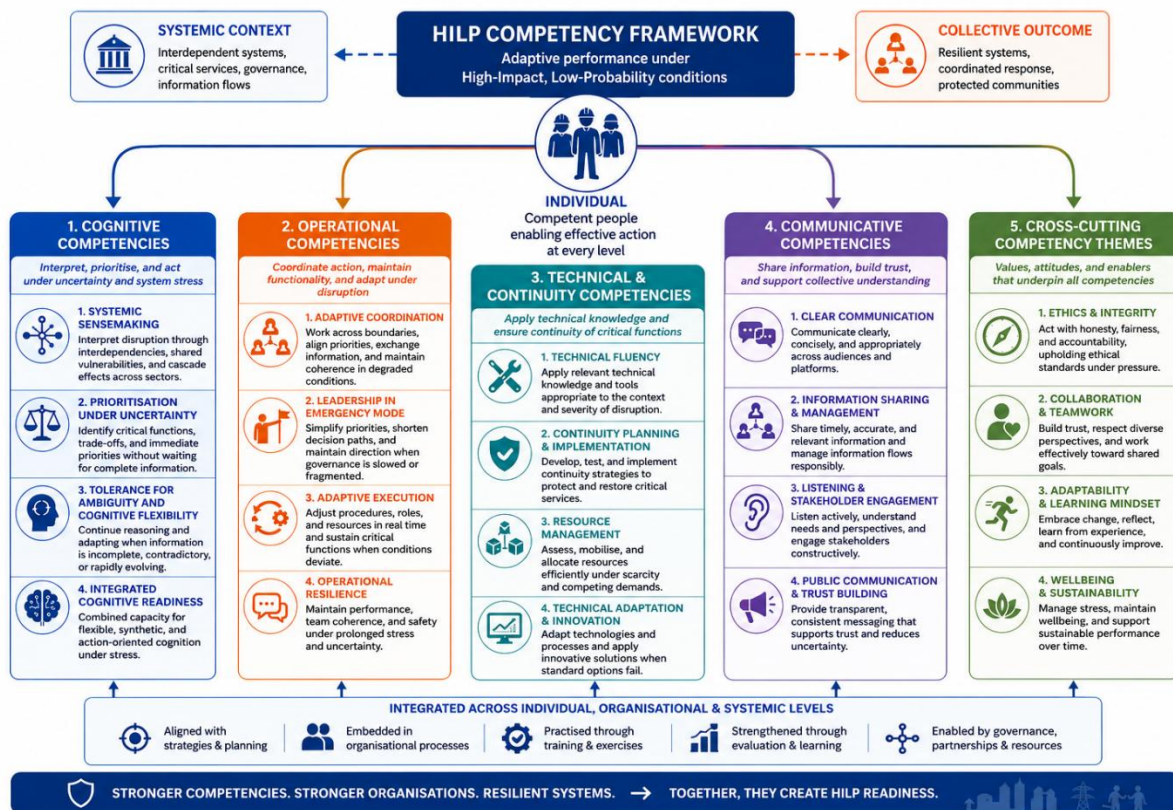


Figure 3. Consolidated framework for HILP readiness competencies

3.4.1. Cognitive Competencies

The first domain concerns the cognitive competencies needed to **interpret, prioritise, and act under conditions of uncertainty and system stress**. D5.1 identifies situational awareness, decision-making under pressure, and cross-sector systems thinking as capability areas for development. D5.2 similarly stresses that HILP conditions are marked by ambiguity, incomplete information, competing priorities, and rapidly changing operational pictures. HILP readiness therefore depends in part on cognitive performance that is **flexible, synthetic, and able to function without stable certainty**.

A first core competency in this domain is **systemic sensemaking**. This is the ability to build an operational picture that recognises interdependencies, common failure points, and likely cascade pathways across functions and sectors. It goes beyond awareness of one's own system and includes the ability to interpret disruption in terms of wider implications and to recognise that a local failure may signal broader degradation. This competency is supported by recurring stress-test findings showing that different disruptions often converge on common vulnerabilities such as electricity, communications, access routes, and governance bottlenecks. It is also consistent with D5.1's emphasis on cross-sector systems thinking and with D5.2's wider framing of capacity needs across systemic, organisational, and individual levels.

A second core competency is **prioritisation under uncertainty**. HILP conditions often do not allow actors to wait for a complete or stable picture before acting. Instead, they must identify what matters most, what function must be preserved first, what trade-offs are unavoidable, and which disruptions are likely to become critical if ignored. D5.1 repeatedly links adaptive readiness to decision-making under pressure and leadership in emergency mode, while stress-test findings show that governance grip and coordination often weaken when several systems are stressed at once. Prioritisation under uncertainty is therefore essential because it allows actors to move from confusion to action without depending on full certainty.

A third core competency is **tolerance for ambiguity and cognitive flexibility**. This means being able to continue reasoning and acting when information is incomplete, contradictory, or evolving, and when standard assumptions or procedures no longer fit. D5.1 explicitly highlights the need to take decisions under uncertainty and to adapt when existing plans no longer apply, while D5.2 argues that HILP actors must function when normal scripts fail. **This competency underpins the others:** without some degree of ambiguity tolerance, sensemaking and prioritisation are likely to collapse into delay, false reassurance, or rigid dependence on unavailable information.

Taken together, these competencies capture the cognitive side of adaptive readiness: not only understanding what is happening, but also being able to think functionally, set priorities, and maintain judgement when certainty is not available (see Table 3).

Table 3. Summary of principal cognitive competencies

Competency	Definition	HILP relevance
Systemic sensemaking	Ability to interpret disruption through interdependencies, shared vulnerabilities, and cascade effects across sectors.	Supports recognition of wider systemic implications beyond local failure.
Prioritisation under uncertainty	Ability to identify critical functions, trade-offs, and immediate priorities without waiting for complete information.	Enables timely action despite ambiguity and unstable operational conditions.
Tolerance for ambiguity and cognitive flexibility	Ability to continue reasoning and adapting when information is incomplete, contradictory, or rapidly evolving.	Reduces the risk of delay, rigidity, and dependence on failing routines or assumptions.
Integrated cognitive readiness	Combined capacity for flexible, synthetic, and action-oriented cognition under stress.	Underpins effective response where uncertainty and system disruption are persistent.

3.4.2. Operational Competencies

The second domain concerns operational competencies, understood **as the capabilities required to coordinate action, maintain functionality, and adapt roles and procedures under disrupted conditions**. D5.1 repeatedly highlights leadership in emergency mode, multi-agency coordination, and adaptive readiness, while stress-test findings show that weak coordination, fragmented authority, and dependence on normal structures are recurring problems under compound disruption. HILP readiness therefore depends not only on technical and cognitive ability, but also on the practical capacity to sustain collective action under pressure.

A first core competency in this domain is **adaptive coordination**. This refers to the ability to work across organisational, sectoral, and functional boundaries when dependencies are stressed and no single actor holds the whole picture. It includes **aligning priorities, exchanging relevant information, clarifying roles, and maintaining coherence** without waiting for ideal hierarchy or perfect operating conditions. D5.1 explicitly links preparedness to multi-agency coordination and role-based response, while stress-test findings repeatedly show that centralised control can struggle when digital, physical, and social pressures interact. Adaptive coordination is therefore essential because HILP response often depends on maintaining function across actors whose normal interaction patterns were not designed for compound disruption.

A second core competency is **leadership in emergency mode**. This concerns the ability **to simplify priorities, shorten decision paths, and maintain coherent action** when routine governance structures or operating processes become too slow or fragmented. D5.1 explicitly recommends role-based rather than person-based response capacity, shorter emergency decision chains, and more practical forms of leadership training under uncertainty. This competency is not limited to formal senior leadership; it also applies to those who must take practical direction-setting roles under stress. It becomes especially important when crises accelerate faster than institutional procedures or when competing priorities create paralysis.

A third core competency is **role-based resilience and task adaptability**. Stress-test and implementation evidence shows that person-dependence, limited surge, and rigid task assumptions weaken the ability to function when multiple pressures overlap. D5.1 responds to this by calling for role-based resilience, interchangeability of key positions where possible, and stronger adaptive-readiness practice. This competency therefore refers to the ability of teams and individuals to **reconfigure responsibilities, adjust routines**, and continue functioning when familiar role patterns are disrupted. It also supports continuity under staffing or coordination stress.

Together, these operational competencies capture the practical side of HILP readiness: not simply deciding what should happen, but **sustaining coordination, leadership, and workable task organisation in real time as conditions deteriorate** (See Table 4).

Table 4. Summary of operational competencies

Competency	Definition	HILP relevance
Adaptive coordination	Ability to work across organisational, sectoral, and functional boundaries to align priorities, exchange relevant information, clarify roles, and maintain coherence under disrupted conditions.	Supports collective action when dependencies are stressed, authority is fragmented, and no single actor holds the full operational picture.
Leadership in emergency mode	Ability to simplify priorities, shorten decision paths, and maintain coherent action when routine governance structures or operating processes become too slow or fragmented.	Enables timely direction-setting and reduces the risk of paralysis when crises outpace institutional procedures or create competing priorities.

Competency	Definition	HILP relevance
Role-based resilience and task adaptability	Ability of teams and individuals to reconfigure responsibilities, adjust routines, and continue functioning when familiar role patterns are disrupted.	Strengthens continuity under staffing, coordination, or surge pressures by reducing dependence on specific individuals and rigid task assumptions.
Integrated operational readiness	Combined capacity to sustain coordination, leadership, and workable task organisation in real time under conditions of disruption and pressure.	Underpins effective response where uncertainty, system stress, and compound disruption weaken normal structures and procedures.

3.4.3. Technical and Continuity Competencies

The third domain concerns technical and continuity competencies, understood as the **capabilities required to preserve essential functions when infrastructure, utilities, communication systems, and support services are degraded or partially unavailable**. D5.1 strongly supports this domain through its focus on minimum viable functioning, critical dependencies, fallback arrangements, and continuity under degraded conditions. Across completed AGILE stress-test activities, electricity, communications, water, transport, fuel, and supply chains repeatedly emerged as shared cascade drivers. This makes continuity competence central to HILP readiness.

A first core competency in this domain is **critical dependency awareness**. This means recognising which functions rely on which enabling systems and how quickly degradation in one domain may affect others. It includes awareness of dependencies on electricity, fuel, ICT, access routes, staffing, and communication infrastructure, as well as recognition that these dependencies may behave differently under prolonged or compound disruption than under routine planning assumptions. This competency is strongly supported by recurring stress-test findings that identify electricity as a foundational point of failure with cascade effects across multiple sectors and functions. D5.1's continuity and planning tools are also built around identifying enabling dependencies and continuity threats.

A second core competency is **minimum viable continuity planning** in practice. This refers to the ability to define what function must continue, what reduced level is acceptable, what fallback arrangements exist, and when reduced-service or contingency modes should be activated. D5.1 repeatedly stresses that continuity should not be assumed to mean full normal functioning and that organisations need explicit logic for what must still work under severe stress. In competency terms, this means **being able to think in thresholds rather than ideals and to translate broad resilience concepts into concrete continuity decisions**.

A third core competency is **analogue and fallback operating ability**. Stress-test findings repeatedly show the importance of maintaining function when digital, automated, or networked systems fail. D5.1 similarly recommends analogue workarounds, fallback arrangements, manual procedures, and communication continuity beyond ICT dependence. This competency therefore refers to the practical ability to maintain or restore essential services through non-digital, substitute, or reduced-system arrangements where necessary. It is not a return to analogue methods for their own sake, but the ability to activate them meaningfully under degraded conditions.

Collectively, this domain reflects the fact that HILP events do not only test judgement and coordination. They also test whether actors can preserve essential functions when the infrastructure assumptions beneath modern operations begin to fail (See Table 5).

Table 5. Summary of technical and continuity competences

Competency	Definition	HILP relevance
Critical dependency awareness	Ability to recognise which essential functions depend on which enabling systems, and how degradation in one domain may generate effects across others.	Supports earlier recognition of cascade risks by identifying vulnerabilities linked to electricity, fuel, ICT, access routes, staffing, and communication infrastructure.
Minimum viable continuity planning in practice	Ability to determine which functions must continue, what reduced level of service is acceptable, what fallback arrangements exist, and when contingency modes should be activated.	Enables actors to preserve essential functions under severe stress by working to thresholds of acceptability rather than assuming full normal operation can be maintained.
Analogue and fallback operating ability	Ability to maintain or restore essential services through manual, substitute, non-digital, or reduced-system arrangements when digital or networked systems fail.	Strengthens operational continuity when ICT, automation, or networked systems are degraded or unavailable, reducing dependence on normal technical infrastructure.
Integrated technical and continuity readiness	Combined capacity to preserve essential functions when infrastructure, utilities, communication systems, and support services are degraded or partially unavailable.	Underpins effective response where disruption affects the technical assumptions on which modern operations depend.

3.4.4. Communicative Competencies

The fourth domain concerns **communicative competencies**, treated here as both operational and strategic capacities rather than as an isolated communications specialty. D5.3 is especially important in this domain because it argues that HILP communication should **support understanding, preparedness, protective action, trust, recovery, and learning**, and that it **must be meaningful, understandable, actionable, multilingual or otherwise accessible** where needed, **coordinated** across actors, and **transparent about uncertainty**. D5.1 also identifies communication and public information as a capability area as well.

A first core competency in this domain is **information triage and communication clarity**. This refers to the ability to distinguish signal from noise, prioritise what needs to be communicated, and formulate guidance in ways that clearly support action. D5.3 repeatedly shows that communication is effective when it combines threat information with feasible action, identifies who is affected, what they should do, and why that action matters. In HILP conditions, where uncertainty and overload are common, information triage becomes essential because communication failure is often not the absence of information, but the inability to make urgent meaning visible in time.

A second core competency is **uncertainty communication**. D5.3 repeatedly argues that HILP communication must distinguish between what is known, what remains uncertain, what is being done to clarify the situation, and what people should do in the meantime. This competency therefore includes the ability to communicate without false certainty, maintain trust while acknowledging ambiguity, and support action even when the full picture is not yet stable. This is important because the pressure to appear fully in control may encourage false reassurance, yet misleading reassurance can damage trust and reduce the effectiveness of action when conditions change.

A third core competency is **layered, audience-aware communication under degraded conditions**. D5.3 shows that no single communication channel is sufficient, that audiences differ in access, language, trust, and ability to act, and that communication should be structured across multiple pathways, including digital, broadcast, interpersonal, local, and low-tech forms where

needed. Stress-test findings reinforce this by showing repeated communication fragility under power loss and ICT degradation. This competency therefore includes the ability to **adapt communication to channel conditions, audience profiles, and degraded environments**, including use of fallback and analogue communication where required.

A fourth core competency is **trust-sensitive and inclusion-aware communication**. D5.3 makes clear that communication is judged not only on factual accuracy, but also on trustworthiness, clarity, fairness, and the practical extent to which different groups can understand and use what is communicated. This competency therefore includes sensitivity to **vulnerable groups, non-local or transient populations, language barriers, and different levels of risk familiarity**. It also includes awareness that communication should not assume a passive public, but should recognise communities, intermediaries, and affected groups as active participants in sensemaking and response.

These communicative competencies reflect the fact that HILP readiness depends not only on internal technical action, but also on the ability to **create understanding, orient action, preserve trust, and sustain coordination** under demanding and uncertain conditions (See Table 6).

Table 6. Summary of communicative competencies

Competency	Definition	HILP relevance
Information triage and communication clarity	Ability to distinguish signal from noise, prioritise what needs to be communicated, and formulate guidance in ways that clearly support action.	Supports timely and meaningful communication under conditions of uncertainty and overload by making urgent meaning visible and actionable.
Uncertainty communication	Ability to communicate what is known, what remains uncertain, what is being done to clarify the situation, and what action should be taken in the meantime.	Helps maintain trust and supports action without relying on false certainty or misleading reassurance when the situation is still evolving.
Layered, audience-aware communication under degraded conditions	Ability to adapt communication across multiple channels and formats in response to audience needs, access constraints, language differences, and degraded operating conditions.	Strengthens communication continuity when power loss, ICT disruption, or audience diversity limit the effectiveness of any single channel or standard approach.
Trust-sensitive and inclusion-aware communication	Ability to communicate in ways that are not only factually accurate, but also understandable, fair, accessible, and responsive to the needs of different groups.	Preserves trust, improves usability of guidance, and supports wider participation in sensemaking and response, especially among vulnerable or less well-served groups.
Integrated communicative readiness	Combined capacity to create understanding, orient action, preserve trust, and sustain coordination through communication under demanding and uncertain conditions.	Underpins effective response where HILP readiness depends not only on internal action, but also on the ability to support public understanding, protective action, and coordinated response.

3.5. Cross-Cutting Competency Themes

Although the framework is organised into four domains, several themes cut across them.

The first is **adaptation rather than compliance**. Across D5.1, D5.2, and the stress-test findings, the repeated message is that HILP conditions often break the assumptions on which routine plans and procedures are built. Competence therefore includes the ability to move beyond compliance with a pre-written script and to **adapt functions, decisions, messages, and roles** in ways that preserve coherence under degraded conditions.

The second is **cross-sector orientation**. HILP effectiveness depends on whether actors can see beyond their own organisational lens and understand the implications of disruption for other functions and dependencies. This theme is reflected in D5.1's emphasis on cross-sector systems thinking and multi-agency coordination and is reinforced by stress-test evidence showing that failures often become critical precisely because systems are tightly coupled.

The third is **learning and reflective practice**. Both D5.1 and D5.3 treat evaluation and review as integral to preparedness rather than as afterthoughts. The competency framework should therefore be understood dynamically. It is not simply a fixed list of capacities, but a platform for observation, debrief, and refinement through training and other readiness activities (See Table 7).

Table 7. Summary of cross cutting competencies

Competency theme	Definition	HILP relevance
Adaptation rather than compliance	Ability to move beyond routine adherence to pre-written plans and instead adapt functions, decisions, messages, and roles in ways that preserve coherence under degraded conditions.	Supports effective action when HILP conditions break the assumptions on which normal procedures and established scripts depend.
Cross-sector orientation	Ability to look beyond one's own organisational perspective and understand how disruption affects interconnected functions, dependencies, and actors across sectors.	Strengthens HILP effectiveness by improving recognition of tightly coupled risks and the wider implications of failure across systems.
Learning and reflective practice	Ability to treat evaluation, review, debrief, and refinement as integral parts of preparedness and readiness development.	Supports continuous improvement by ensuring that training, stress-testing, and lived experience are translated into stronger future readiness.
Integrated cross-cutting readiness	Combined capacity to adapt, think and act across sectors, and refine practice through learning under conditions of uncertainty and disruption.	Underpins the dynamic character of HILP readiness by ensuring that competence is not static, but continuously adjusted through reflection and experience.

Table 8 presents a consolidated competency framework for readiness under High-Impact, Low-Probability (HILP) conditions. The framework integrates the main competencies identified across the cognitive, operational, technical and continuity, and communicative domains, together with the cross-cutting orientations of adaptation, cross-sector awareness, and reflective learning.

Table 8. Consolidated competency framework

Domain	Competency / theme	Definition	HILP relevance
Cognitive	Systemic sensemaking	Ability to interpret disruption through interdependencies, shared vulnerabilities, and cascade effects across sectors and functions.	Supports recognition of wider systemic implications beyond local failure and strengthens understanding of cross-sector degradation.
Cognitive	Prioritisation under uncertainty	Ability to identify critical functions, risks, and trade-offs and to act without waiting for complete or stable information.	Enables timely action despite ambiguity, competing priorities, and rapidly changing operational conditions.
Cognitive	Tolerance for ambiguity and cognitive flexibility	Ability to continue reasoning and adapting when information is incomplete, contradictory, or rapidly evolving.	Reduces the risk of delay, rigid thinking, and dependence on assumptions or procedures that no longer fit the situation.
Operational	Adaptive coordination	Ability to work across organisational, sectoral, and functional boundaries to align priorities, exchange information, clarify roles, and maintain coherence under disrupted conditions.	Supports collective action when dependencies are stressed, authority is fragmented, and no single actor holds the full operational picture.
Operational	Leadership in emergency mode	Ability to simplify priorities, shorten decision paths, and maintain coherent action when routine governance structures become too slow or fragmented.	Enables timely direction-setting and reduces paralysis when crises outpace established procedures.
Operational	Role-based resilience and task adaptability	Ability of teams and individuals to reconfigure responsibilities, adjust routines, and continue functioning when familiar role patterns are disrupted.	Strengthens continuity under staffing, coordination, and surge pressures by reducing dependence on specific individuals and rigid task assumptions.
Technical and continuity	Critical dependency awareness	Ability to recognise which essential functions depend on which enabling systems, and how degradation in one domain may affect others.	Supports earlier identification of cascade risks linked to electricity, fuel, ICT, access routes, staffing, and communication infrastructure.
Technical and continuity	Minimum viable continuity planning in practice	Ability to determine which functions must continue, what reduced level of service is acceptable, what fallback arrangements exist, and when contingency modes should be activated.	Enables preservation of essential functions under severe stress by focusing on continuity thresholds rather than full normal operation.
Technical and continuity	Analogue and fallback operating ability	Ability to maintain or restore essential services through manual, substitute, non-digital, or reduced-system arrangements when digital or networked systems fail.	Strengthens continuity when ICT, automation, or other technical systems are degraded or unavailable.



Domain	Competency / theme	Definition	HILP relevance
Communicative	Information triage and communication clarity	Ability to distinguish signal from noise, prioritise what needs to be communicated, and formulate guidance in ways that clearly support action.	Supports timely and meaningful communication under uncertainty and overload by making urgent meaning visible and actionable.
Communicative	Uncertainty communication	Ability to communicate what is known, what remains uncertain, what is being done to clarify the situation, and what action should be taken in the meantime.	Helps preserve trust and support action without relying on false certainty or misleading reassurance.
Communicative	Layered, audience-aware communication under degraded conditions	Ability to adapt communication across multiple channels and formats in response to audience needs, access constraints, language differences, and degraded operating conditions.	Strengthens communication continuity when power loss, ICT disruption, or audience diversity limit the effectiveness of any single channel.
Communicative	Trust-sensitive and inclusion-aware communication	Ability to communicate in ways that are not only factually accurate, but also understandable, fair, accessible, and responsive to different groups.	Preserves trust, improves usability of guidance, and supports broader participation in sensemaking and response.
Cross-cutting	Adaptation rather than compliance	Ability to move beyond routine adherence to pre-written plans and instead adapt functions, decisions, messages, and roles in ways that preserve coherence under degraded conditions.	Supports effective action when HILP conditions break the assumptions on which normal procedures and scripts depend.
Cross-cutting	Cross-sector orientation	Ability to look beyond one's own organisational perspective and understand how disruption affects interconnected functions, dependencies, and actors across sectors.	Strengthens effectiveness by improving recognition of tightly coupled risks and wider implications of systemic failure.
Cross-cutting	Learning and reflective practice	Ability to treat evaluation, review, debrief, and refinement as integral elements of preparedness and readiness development.	Supports continuous improvement by ensuring that training, stress-testing, and operational experience are translated into stronger future readiness.

4. Pilot Training for HILP Capacity Development

The pilot training presented in this chapter is currently at a design stage within WP5. The content, structure, competency framework, and the module described in Sections 4.2–4.9 represent a consolidated and internally consistent draft training design, developed on the basis of evidence from AGILE activities and WP5 analytical outputs. No pilot exercise has been conducted with this training at this stage and therefore it should be considered as a prepared intervention model awaiting testing and validation.

To date, the development process has (i) synthesised recurrent findings from AGILE stress-testing and implementation activities, (ii) translated these into a competency-based framework for adaptive readiness, and (iii) structured these competencies into a modular training architecture aligned with WP5 objectives on evidence-informed planning, communication and operational readiness.

The next step in the development trajectory is operationalisation and delivery of the pilot training in a controlled setting. This includes developing facilitation materials, developing content for scenarios, identifying participant groups, and organising logistics for implementation. The pilot will be the first empirical application of the training design and is intended to test the relevance, usability and coherence of the competency framework and module structure under realistic facilitation conditions.

Following pilot implementation, a structured evaluation process will be undertaken based on participant feedback, facilitator observations and pre-defined assessment criteria. Findings of this assessment will feed into a cycle of revision and refinement, which may include changes in competency definitions, module design, facilitation approach and integration logic.

4.1. Position of the Pilot Training withing WP5

The pilot training presented in this deliverable is positioned within WP5 as a **practical capacity-development and uptake mechanism** that complements the broader evidence-to-practice logic of the work package. Within WP5, D5.1 establishes the overarching approach for evidence-based planning for HILP events and defines a planning uptake layer whose purpose is not to duplicate AGILE stress-testing methodologies, but **to help users interpret, organise, and apply evidence** generated through AGILE activities in planning, preparedness, governance, communication, and learning. In this sense, D5.1 provides the broader planning architecture within which the present training design is situated.

This **distinction with the stress-test implementation** is important both methodologically and conceptually. Methodologically, it preserves the integrity of the AGILE stress-testing framework by not reproducing its diagnostic purpose. Conceptually, it supports the broader WP5 objective of ensuring that evidence does not remain a stand-alone analytical output, but is translated into strengthened planning, improved communication, and enhanced adaptive capability.

D5.2 builds on that foundation by addressing a related but distinct question: **how evidence should be translated not only into planning implications, but also into practical capability development**. While D5.1 provides the conceptual and procedural basis for turning evidence into

governance, continuity, communication, and preparedness action, D5.2 focuses on the human and organisational dimension of that uptake process. More specifically, it translates recurrent evidence from AGILE activities into competencies, capability-development needs, and a pilot training package intended to strengthen adaptive readiness for HILP events. This framing is consistent with D5.1's explicit emphasis on capacity building and adaptive readiness as a central pillar of evidence-based HILP preparedness, and with its training-needs logic, which converts evidence into concrete capability requirements and proposes intervention types such as workshops, exercises, simulations, and leadership-focused rehearsal.

The relationship with D5.3 is equally important. D5.3 defines risk communication for HILP events as more than the transmission of information and instead frames it as a continuous process that should support preparedness, protective action, trust, recovery, and learning before, during, and after crises. It emphasises that communication for HILP events must be actionable, inclusive, coordinated, transparent about uncertainty, and attentive to diverse audiences and vulnerable groups. These principles are directly relevant to D5.2, especially where the pilot training addresses competencies related to communication, information triage, internal coordination, and public-facing decision support under degraded and uncertain conditions.

Accordingly, if D5.1 defines how evidence is translated into planning logic and practical tools, and D5.3 defines how evidence should inform risk communication practice, D5.2 addresses how evidence can be translated into the competencies and training arrangements needed to make those planning and communication ambitions operational in practice.

4.2. Purpose and Objectives of the Pilot Training

The purpose of the pilot training is to **strengthen adaptive readiness for HILP events** by translating recurrent evidence from AGILE activities into a practical capacity-development intervention. The training is designed to **move beyond awareness-raising or conceptual familiarisation** alone. Its function is to support participants in practising the kinds of skills, judgements, and coordination behaviours that become critical when HILP events disrupt normal assumptions, degrade established systems, and place multiple services and actors under stress at the same time.

A first objective of the pilot is therefore to **convert evidence into practical capability development**. D5.1 already establishes that stress-test findings, implementation feedback, debriefs, and other operational lessons should be translated into specific capability-building needs. It proposes that this translation should focus on what people, teams, or organisations need to learn, practise, or rehearse, and should distinguish between different types of interventions depending on the nature of the gap. The pilot training takes that logic forward by providing a concrete environment in which identified capacities can be developed and observed through structured practice.

A second objective is to **test and refine the competency framework** developed in the preceding chapter. The pilot is not only a delivery mechanism, but also a validation mechanism. By structuring the training around defined competency clusters and associated learning objectives, the exercise can show whether the proposed framework captures the kinds of capacities that practitioners need under HILP conditions, whether these capacities can be meaningfully developed in a training format, and whether further adjustment to the framework is required.

A third objective is to **strengthen communication-related readiness** in a way that is consistent with D5.3. Communication is not treated here as a separate or isolated topic, but as a cross-cutting

requirement of HILP response and preparedness. D5.3 shows that effective HILP communication must support understanding, preparedness, protective action, trust, recovery, and learning across the full event cycle, and that it must remain actionable, inclusive, coordinated, and transparent about uncertainty. These requirements have clear implications for the pilot training. Participants should not only practise decision-making and continuity management under pressure; they should also rehearse how to communicate priorities, explain uncertainty, coordinate across actors, and support different audiences under conditions of degraded systems and changing information.

The fourth objective is to **support cross-sector and multi-level preparedness**. D5.1 makes clear that adaptive readiness cannot be confined to one level of an organisation or one professional community. Strategic, tactical, and operational levels are often trained in silos, which limits shared awareness of cascading effects and weakens preparedness for system-wide disruption. The pilot is therefore designed to **encourage interaction across roles and functions**, with the aim of strengthening not only individual performance but also shared understanding, inter-organisational coordination, and common recognition of critical dependencies and priorities.

4.3. Design Principles for the Pilot

The design of the pilot training is guided by a set of principles intended to ensure coherence with the wider WP5 logic, relevance to HILP conditions, and practical usability for end users. These principles shape not only the content of the training, but also its format, facilitation, and role within AGILE.

The first principle is that the pilot is **evidence-informed**. The training is not designed based on abstract assumptions about what participants might need in a future HILP event. Instead, it is **shaped by recurrent evidence from AGILE activities, implementation lessons, and the broader WP5 evidence base**. This is consistent with D5.1's definition of evidence-informed planning and with its repeated emphasis that findings from stress tests, operational lessons, and expert judgement should be translated into practical uptake mechanisms rather than remaining isolated observations. In the context of D5.2, this means that the training design begins with recurrent capability demands and observed pressure points, and translates those into learning needs, modules, and rehearsal tasks.

The second principle is that the pilot is **competency-based**. The organising backbone of the training is the competency framework developed in Chapter 2. This principle is also strongly supported by D5.1's "Training Needs from Evidence" logic, which identifies recurring capability areas such as situational awareness, decision-making under pressure, leadership in emergency mode, multi-agency coordination, communication and public information, continuity under degraded conditions, support for vulnerable groups, and cross-sector systems thinking. The pilot is therefore not designed simply as a themed agenda or a generic scenario exercise. Each module exists because it develops, rehearses, or tests one or more specific competency clusters that have emerged as relevant for HILP readiness.

The third principle is that the pilot is **practice-oriented rather than diagnostic**. This distinction is central to the role of D5.2 within WP5. D5.1 clearly states that the WP5 toolbox is intended to support the use of evidence for planning and preparedness, not to duplicate the AGILE stress-testing framework. The pilot training follows the same logic. It is not intended to re-run a stress test, reproduce a tiered scenario methodology, or generate a further round of system diagnosis. Its function is instead to create a structured practice environment in which participants can **exercise adaptive judgement, communication, prioritisation, continuity thinking, and coordination** under conditions that reflect HILP-type pressure.

The fourth principle is that the pilot should remain **usable and facilitation sensitive**. Experience from completed AGILE activities shows that participants can engage strongly with non-classical

formats, but that onboarding, warm-up, role clarity, plenary design, facilitator preparation, and language accessibility all influence the quality of learning. Feedback from internal reviews and participant reflections highlighted the value of stronger explanation at the outset, more explicit guidance on how the method works, clearer group-role assignment, more interactive plenaries, and better accommodation of language and participation barriers. These lessons are directly relevant for the pilot design, particularly because the training is intended to be practical and transferable rather than conceptually impressive but difficult to deliver.

Finally, the pilot is designed according to a principle of **iterative learning and refinement**. In line with the broader WP5 logic, the training is not seen as a finished product that merely needs to be delivered. It is treated as a structured intervention through which competencies can be observed, capability gaps further clarified, and training assumptions revised. This learning orientation reflects D5.1's emphasis on review triggers, organisational uptake, and continuous refinement, as well as D5.3's emphasis on evaluation and feeding communication lessons back into preparedness and future action.

4.4. Detailed Design of the Training Modules

The pilot training is organised into four modules that translate the evidence-derived competency clusters identified in Chapter 2 into structured learning tasks, facilitated interaction, and practical rehearsal. Each module addresses a distinct cluster of capacities, but none should be understood in isolation. Together, they form the core learning architecture of the pilot and create the pathway through which participants move from module-specific practice toward integrated application in the final integrated exercise.

Although the modules are presented separately for design clarity, they are intended to function as connected architecture rather than as isolated blocks. **Module A** provides the **sensemaking and prioritisation** foundation that supports all later action. **Module B** addresses **communication and coordination** aspects through which priorities become visible and actionable. **Module C** focuses on the **continuity and dependency** logic required to preserve essential functions under infrastructure stress. **Module D** strengthens the **coordination and leadership** capacities required to hold collective action together across roles and organisations. These clusters then come together in the integrated exercise, which is intended to test whether participants can combine them in real time under HILP-like pressure.

4.4.1. Module A - Systemic Sensemaking and Prioritisation Order

The purpose of Module A is to strengthen participants' ability to **interpret disruption, recognise interdependencies, and make defensible prioritisation decisions** when the operational picture is incomplete, unstable, or rapidly evolving. This module responds directly to recurring AGILE evidence pointing to HILP environments characterised by ambiguity, incomplete information, competing priorities, and rapidly changing operational pictures. In the competency framework, these pressures are translated into the cognitive competencies of systemic sensemaking, prioritisation under uncertainty, and tolerance for ambiguity and cognitive flexibility.

In practical terms, the module should help participants build a shared operational picture, identify which functions and consequences matter most, and decide how to act without waiting for full certainty. This reflects the wider HILP challenge described in D5.2, where decision-makers must move from confusion to action under severe uncertainty and where local failures may signal wider system degradation. The module is therefore central not only to cognitive readiness, but also to the wider logic of risk-agnostic, function-oriented preparedness.

Indicative learning objectives for this module may include:

- identifying relevant dependencies and likely cascade pathways across sectors;
- distinguishing urgent signals from background noise in a changing operational picture;
- prioritising essential functions and response actions under time pressure;
- articulating the rationale for decisions taken under incomplete information.

These objective formulations are drafting suggestions, but they are directly aligned with the cognitive competency descriptions, and the capability demands already identified in D5.2.

The preferred delivery pattern for Module A is a **scenario-cue sequence combined with prioritisation tasks and a facilitated sensemaking debrief**. In practice it means that participants will be presented with an incomplete and changing situation, asked to identify the most critical implications and priorities, and then guided through a structured debrief in which different interpretations, assumptions, and decision logics are compared.

From an evaluation perspective, this module would generate useful evidence on how participants read disruption, how they justify priority choices, and how well they recognise interdependencies before later modules add further communication, continuity, and coordination pressures.

4.4.2. Module B - Communication and Coordination Under Degraded Conditions

The purpose of Module B is to **develop participants' ability to communicate clearly, coordinate internally, and adapt messages and channels under conditions of disruption, uncertainty, and communication fragility**. This module is directly supported by recurring AGILE findings showing communication overload, degraded coordination, limited analogue fallback, difficulty maintaining a trusted operational picture, and risks of confusion or misinformation when systems are disrupted. In the competency framework, these recurring pressures are translated into communicative competencies such as information triage and communication clarity, uncertainty communication, and layered, audience-aware communication under degraded conditions, together with coordination-related operational competencies.

In practical terms, the module should help participants move beyond communication as message transmission alone and instead practise communication as part of operational functioning under HILP conditions. This includes deciding what must be communicated, to whom, through which channel, with what degree of certainty, and in support of what action. It also includes maintaining coordination when the communication environment itself is degraded. This aligns directly with D5.2's argument that communication in HILP contexts is a practical condition of understanding, action, trust, and collective functioning.

Indicative learning objectives for this module may include:

- distinguishing urgent information from noise and overload;
- formulating action-oriented guidance under uncertainty;
- adapting communication to different audiences and degraded channel conditions;

- maintaining internal coordination and message coherence under pressure.

The preferred delivery pattern for Module B is a **communication task sequence involving audience adaptation, message testing, internal coordination prompts, and structured reflection**. In practice this means that participants will be required to produce and adapt messages for different audiences, explain what is known and unknown, test whether messages are understandable and actionable, and compare communication choices in a structured debrief. This would make the module's communication competencies visible in use rather than leaving them at the level of abstract discussion.

From an evaluation point of view, this module would generate concrete outputs such as message products, coordination choices, and audience adaptation decisions. These would provide a strong basis for examining not only whether communication occurred, but whether it supported action, understanding, and trust under degraded conditions.

4.4.3. Module C - Continuity of Critical Functions Under Degraded Infrastructure

The purpose of Module C is to **strengthen participants' ability to preserve essential functions** when infrastructure, utilities, communication systems, and support services are degraded or partially unavailable. This module is the clearest training response to recurring AGILE evidence showing electricity as a foundational point of failure, together with continuity stress, fallback needs, and cascading impacts across infrastructure and essential services. In the competency framework, these demands are translated into critical dependency awareness, minimum viable continuity planning, and analogue and fallback operating ability.

In practical terms, the module should help participants identify which functions must continue, what reduced level of service is acceptable, what dependencies are most critical, and which fallback arrangements should be activated when core assumptions fail. This supports D5.2's wider argument that continuity under HILP conditions cannot be understood as preserving full normal functioning, but must instead be organised around threshold thinking, degraded operation, and minimum viable continuity.

Indicative learning objectives for this module may include:

- identifying critical dependencies and likely cascade effects across functions;
- defining continuity thresholds and minimum viable service levels;
- selecting and justifying fallback or analogue arrangements;
- recognising when continuity assumptions are no longer valid and reduced-service modes must be activated.

The preferred delivery pattern for Module C is a **continuity-threshold exercise combined with fallback planning tasks and a table-top or simulation-based continuity scenario**. In practice, participants will be asked to work through a degradation scenario, identify which functions fail first, define what must still work, and propose reduced-service or fallback arrangements under constrained conditions. A short debrief could then focus on trade-offs, threshold logic, and the realism of proposed continuity measures.

Evaluating this module would focus on how well participants recognise dependencies, how they think in thresholds rather than ideals, and whether they can translate broad resilience language

into practical continuity decisions. This makes Module C one of the most operationally tangible components of the pilot architecture.

4.4.4. Module D - Adaptive Coordination and Role Based Response

The purpose of Module D is to **strengthen the ability to sustain coordinated action, leadership, and role clarity** when normal structures become too slow, fragmented, or rigid to function effectively under HILP conditions. This module responds directly to recurring AGILE evidence on governance difficulties, coordination friction, role strain, and the need for coherent action across different organisations and levels under stress. In the competency framework, these pressures are translated into adaptive coordination, leadership in emergency mode, and role-based resilience and task adaptability.

In practical terms, the module should help participants work across organisational boundaries, shorten decision paths where necessary, clarify who decides what under stress, and sustain coherent action when routines no longer fit the operational environment. This also connects directly to D5.2's emphasis on multi-level and cross-sector preparedness, since the capacities addressed here are not confined to one organisation or role group alone.

Indicative learning objectives for this module may include:

- coordinating adaptively across roles, organisations, or sectors under disrupted conditions;
- taking and supporting emergency-mode leadership decisions when routine processes stall;
- clarifying or reconfiguring responsibilities under stress;
- maintaining coherence of action when decision authority and task patterns become fluid.

The preferred delivery pattern for Module D is **role-play combined with coordination exercises, leadership injects, and a structured debrief**. In practice, participants will be placed in role-based coordination situations, confronted with decision bottlenecks or governance friction, and then asked to negotiate priorities, redistribute functions, and maintain coherence of response. The debrief would then examine leadership choices, coordination logic, and the practical effects of different role configurations.

From an evaluation perspective, this module would make visible how participants handle authority, ambiguity, inter-organisational interaction, and leadership under pressure. It is therefore the module that most directly bridges individual competence and collective functioning.

4.4.5. Integrated Exercise

The integrated exercise is the point at which the competency architecture of the pilot is brought together in one practical learning environment. Its purpose is not to introduce a further stand-alone topic, but to allow participants to apply, combine, and test the competency clusters developed across the preceding modules under conditions that reflect HILP-type pressure. In D5.2, the exercise is explicitly positioned as the phase in which sensemaking, prioritisation, communication, continuity thinking, and adaptive coordination are brought together in a single

task. It is therefore a central element of the pilot architecture, because HILP readiness depends not on isolated competence in one domain, but on the ability to integrate several capacities at once under demanding conditions.

The exercise should be understood as an **integrative practice environment** rather than a further diagnostic stress test. This distinction is already emphasised in D5.2 and is important to preserve. The purpose of the exercise is not to diagnose a system in the same way as AGILE stress-testing activities, nor to reproduce a full tiered stress-test methodology. Its function is instead to **create a structured setting in which participants can mobilise the competencies developed through the pilot modules and demonstrate how those capacities interact in real time when circumstances are uncertain, multi-dimensional, and operationally demanding**. The exercise therefore gives practical expression to the wider D5.2 argument that evidence-derived competencies should be translated into observable capability development rather than remaining at the level of conceptual description alone.

In terms of competency integration, the exercise should require participants to work across all four module areas. It should include pressures that call for systemic sensemaking and prioritisation under uncertainty, so that participants must decide what matters most when the operational picture is incomplete or shifting. It should also require communication and coordination under degraded conditions, so that participants must exchange information, explain uncertainty, adapt communication to audiences or channels, and maintain a coherent operational picture. In addition, it should involve continuity of critical functions under degraded infrastructure, requiring participants to recognise dependencies, define continuity thresholds, and consider fallback arrangements when essential systems are compromised. Finally, it should engage adaptive coordination and role-based response, requiring participants to work across responsibilities, clarify roles, and maintain coherent action when routine structures are strained. This integrated logic is already embedded in D5.2's account of the pilot and its final exercise.

A suitable delivery form for the exercise is a **scenario-based, simulation-supported practical task with evolving conditions**, because this format best reflects the integrative function assigned to it in D5.2. An exercise built around a practical scenario with changing information, interdependent pressures, and a requirement for joint decision-making would therefore be fully consistent with that wider methodological logic.

In practical terms, the exercise should place participants in a situation where they must combine rather than isolate competencies. Participants should be required to interpret changing inputs, agree priorities, consider continuity implications, communicate internally and externally, and coordinate their response in a way that remains coherent under pressure. This would provide the clearest practical test of whether the pilot's modular design has succeeded in developing integrated readiness rather than separate clusters of knowledge or discussion.

The exercise is also a particularly important setting for observation and structured debrief. D5.2 already states that the pilot should create a basis for observing whether participants can form a shared picture under uncertainty, prioritise across competing demands, communicate effectively under degraded conditions, recognise continuity thresholds and dependencies, and coordinate adaptively across roles and functions. The exercise allows these capacities to be observed in combination rather than one by one. It therefore provides especially valuable evidence for the observation, debrief, and evaluation framework described later in Chapter 3.

The debrief following the exercise should be treated as a substantive part of the exercise rather than as a short closure. It should allow participants and facilitators to reflect on how the competency clusters were activated in practice, where bottlenecks or trade-offs emerged, how communication and coordination functioned, and how the pilot design itself might be improved. D5.2 already states that the structured debrief and evaluation block is essential because the pilot

is intended not only to provide a learning experience, but also to support refinement of the competency framework and the training design. **The integrated exercise therefore serves a dual role: it is both the culminating integrative exercise of the pilot and one of the most important mechanisms through which the pilot can generate feedback for its own revision and uptake.**

4.5. Target groups and Participants Profiles

The pilot training is intended for actors who operate at the interface of preparedness, coordination, continuity, and communication under HILP conditions. In line with the broader WP5 logic, the training is not designed for one professional group only, but for a set of roles that together influence how systems function under severe disruption. This range provides a suitable basis for defining the participant profile of the pilot.

At the **strategic level**, the pilot is relevant for **senior decision-makers and governance actors** who need to prioritise under uncertainty, clarify emergency-mode arrangements, and understand the consequences of system disruption beyond one organisational boundary. Strategic participants are particularly important where HILP conditions require choices about prioritisation, escalation, trade-offs, and support to other actors rather than detailed management of one operational task.

At the **tactical and coordination level**, the pilot is relevant for those whose role is to connect functions, organisations, or parts of the response system under pressure. This includes coordination leads, preparedness officers, continuity managers, communication coordinators, and other actors who must sustain situational awareness, align priorities, and support functioning across units or agencies. These are all highly relevant at the tactical level, where decisions often concern how to keep multiple functions connected and coherent under severe stress.

At the **operational and support level**, the pilot is relevant for actors who need to function effectively under degraded conditions and who are often closest to the practical consequences of system disruption. While D5.2 is not intended to become a highly technical or sector-specific training package, it should still recognise that operational and support actors are essential to adaptive readiness.

Communication-relevant actors should also be explicitly considered within the participant design. D5.3 demonstrates that HILP communication is not only a public-facing concern, but also a matter of internal coordination, trusted source legitimacy, inclusion, audience adaptation, and communication across preparedness, response, recovery, and learning. It also shows that effective communication often depends on trusted intermediaries, local actors, and channels beyond formal crisis communication structures. For this reason, the pilot should be able to involve those whose role includes internal communication, public information, risk communication, or audience-specific coordination, especially where the training is used to strengthen communication-related competencies.

The participant profile should therefore be broad enough to reflect the cross-sector and multi-level character of HILP readiness but focused enough to ensure that the training remains coherent and operationally relevant. Ultimately, the pilot is not intended for a generic audience, but for actors whose responsibilities influence planning uptake, continuity, coordination, and communication under uncertain and degraded conditions.

4.6. Training Format and Delivery Logic

The pilot training is designed as a **modular, facilitated, and practice-oriented intervention** that combines conceptual framing with structured application. Its format is shaped by two complementary requirements. Rather than treating the pilot as one undifferentiated workshop, the training should be organised into a sequence of modules that correspond to the competency clusters identified above. This allows the pilot to remain structured and reviewable for partners, while also making it easier to observe which capacities are being developed in which parts of the training.

At the same time, the delivery format should include an explicit orientation phase. Feedback from completed AGILE activities showed that participants could engage strongly with unfamiliar formats, but that stronger onboarding, clearer explanation of purpose, and better understanding of the rules of interaction improved learning and confidence. The training should therefore begin with a short but deliberate opening block that explains what its purpose is, how the competency logic works, and how participants are expected to engage with the tasks.

The format should also **emphasise interaction over passive reporting**. Experience from the completed AGILE activities showed that long sequential plenaries reduced engagement and that more interactive discussion formats were preferable. This suggests that the pilot should minimise presentation-heavy plenary reporting and instead rely on smaller-group tasks, guided comparison, and focused debriefs that pull out cross-cutting lessons. This is not only a learning-design issue; it is also aligned with D5.3's communication principles, which show that understanding and action are strengthened when information is meaningful, audience-aware, and organised for practical use rather than merely transmitted in bulk.

The pilot should furthermore **combine conceptual and applied components**. The conceptual elements are necessary because HILP readiness requires a shift in thinking away from routine assumptions and hazard-specific scripts. D5.1 clearly argues that adaptive readiness requires mental flexibility, systems thinking, and the ability to operate when existing plans no longer apply. These capacities cannot be built entirely through abstract input, but neither can they be built without some framing of why the exercise matters and what it is intended to develop. The applied components, by contrast, should create opportunities to rehearse judgement, communication, continuity thinking, and coordination under controlled but demanding conditions.

Communication should be embedded not only in what is taught, but in how the training is delivered. D5.3 repeatedly emphasises that communication should be meaningful, understandable, actionable, and sensitive to diverse audiences and trust dynamics. This has direct implications for the training format itself. Instructions, materials, and facilitation should be clear and accessible. Communication-related tasks should help participants practise both internal and external communication under HILP conditions, and the training should remain attentive to language, audience differences, and the need for practical message clarity. In this sense, D5.3 does not only inform the training content; it also informs the quality criteria of the training process.

Finally, the delivery logic should culminate in an **integrated exercise and a structured debrief**. The integrated exercise is important because HILP readiness depends on the interaction of competencies, not on isolated performance in one skill domain. The debrief is equally important because it is through reflection, comparison, and feedback that the pilot can contribute to framework refinement and organisational learning. The pilot should therefore be designed not only to deliver an experience, but also to generate structured learning about what capacities are present, which remain underdeveloped, and how the training and competency framework should be refined.

4.7. Duration

The pilot training is conceived as a modular capacity-development package that can be delivered in a compact format while remaining adaptable to longer or more intensive delivery where needed.

The timetable below is therefore proposed as an indicative delivery structure rather than a fixed requirement. It is intended to offer a realistic point of reference for piloting while preserving flexibility for local adaptation.

Table 9. Indicative time duration of the training

Training element	Indicative duration
Day 1	
Orientation and adaptive-readiness onboarding	45 min
Module A – Systemic sensemaking and prioritisation under uncertainty	60 min
Module B – Communication and coordination under degraded conditions	75 min
Morning break	15 min
Module C – Continuity of critical functions under degraded infrastructure	60 min
Lunch break	45 min
Module D – Adaptive coordination and role-based response	60 min
Afternoon break	15 min
Consolidation of day – feedback session with participants	45 min
Day 2	
Intro to Day 2	15 min
Integrated exercise	240 min
Structured debrief and evaluation	45 min

Day 1 could begin with a 45-minute orientation and adaptive-readiness onboarding block. In practical terms, this opening block should introduce the rationale for the pilot, clarify how it differs from a stress test, explain the competency-based logic of the training, and provide a short warm-up exercise that helps participants enter the discussion space with confidence.

This should be followed by *Module A: Systemic Sensemaking and Prioritisation Under Uncertainty*, with an indicative duration of 60 minutes. This module is intended to establish the first core competency cluster by helping participants work with incomplete information, identify critical implications, and prioritise under uncertainty. The duration should be sufficient to allow both structured task work and a short, shared reflection, while keeping the pace focused and manageable.

Module B: Communication and Coordination Under Degraded Conditions should be allocated 75 minutes. This slightly longer duration is recommended because communication-related tasks often require participants to move between internal coordination, audience differentiation, message design, and discussion of uncertainty or degraded systems. This module also benefits from extra time because it is one of the clearest points of connection with D5.3, whose guidance

shows that effective HILP communication must be actionable, layered, inclusive, and transparent about uncertainty.

A 15-minute morning break should follow succeeded by the next block *Module C: Continuity of Critical Functions Under Degraded Infrastructure*, with an indicative duration of 60 minutes. This module is intended to help participants work through continuity thresholds, dependencies, and fallback arrangements, and to move from broad resilience language toward more concrete continuity logic. A one-hour slot should provide enough time to connect evidence-based continuity thinking to the practical conditions under which critical functions must be maintained.

A 45-minute lunch break should then be scheduled. After lunch, the day should continue with *Module D: Adaptive Coordination and Role-Based Response*, also allocated 60 minutes. This module is intended to focus on emergency-mode leadership, adaptive coordination, and role-based resilience when routine arrangements become insufficient. It is particularly important in the afternoon because it helps shift participants from the earlier analytical and continuity-oriented work toward more relational and coordination-centred practice.

Given the fact that energy often drops after lunch and that an additional afternoon break is beneficial, a 15-minute afternoon pause is strongly recommended before the final even for of the first day and that is the interactive session in a plenary format with participants. The session will be used to capture the main learnings from the day, receive feedback on the content and slowly prepare for the next day.

Day 2 starts with the introduction to the exercise and its design. This is the point at which the competency clusters are brought together in one practical task. The exercise should not be structured as a further diagnostic stress test, but as an integrative learning environment in which participants combine sensemaking, prioritisation, communication, continuity thinking, and adaptive coordination. Duration of the exercise (240 min) is justified with the fact that the exercise must allow enough space both for the exercise itself and for real-time adjustment, interaction, and shared problem-solving.

The day should conclude with a 45-minute structured debrief and evaluation block. This closing phase is essential, because the pilot is intended not only to deliver a learning experience, but also to support refinement of the competency framework and the training design itself. The debrief should therefore be treated as a substantive component of the training rather than as an administrative closure. It should focus on cross-cutting learning, capability gaps, communication-related insights, and implications for future refinement.

4.8. Communication Integration Withing the Pilot

Communication is integrated into the pilot training **both as a dedicated capability area and as a cross-cutting requirement across all modules**. This dual treatment reflects the logic of D5.3, which argues that HILP communication should not be understood as a discrete emergency message issued at one moment in time, but as a continuous process that supports preparedness, protective action, trust, recovery, and learning before, during, and after crises. In practical terms, this means that communication cannot be confined to a single skill set at the margins of the

training. It is part of how participants understand disruption, coordinate with other actors, explain uncertainty, support diverse audiences, and sustain legitimacy under pressure.

As a stand-alone capability area, communication is **most visible in the module focused on communication and coordination under degraded conditions**. Here the pilot should explicitly address information triage, layered communication under degraded infrastructure, uncertainty communication, and the adaptation of messages for different audiences. D5.3 repeatedly shows that effective HILP communication must combine threat information with feasible action, must remain transparent about what is known and unknown, and must be capable of reaching audiences through multiple channels and formats. This has direct training implications. Participants should practise developing guidance that is not only correct in content, but also usable under realistic conditions of stress, incomplete information, and communication degradation. That includes consideration of channel choice, clarity of action guidance, trustworthiness of source, and the practical barriers different groups may face in receiving or acting on communication.

At the same time, **communication should also be treated as a cross-cutting requirement across the entire pilot**. In the sensemaking and prioritisation module, communication is part of how priorities are articulated and made visible. In the continuity module, communication is part of how fallback arrangements, thresholds, and function-preservation decisions are coordinated and explained. In the adaptive coordination module, communication is inseparable from leadership, legitimacy, and role clarity under pressure. The pilot should therefore ensure that communication is not treated as an isolated set of outputs, but as one of the practical conditions of functioning under HILP conditions.

This integrated approach is also important because D5.3 repeatedly emphasises the need for communication to be actionable. Information that does not support decision-making or protective behaviour is of limited value in HILP contexts. The training should therefore avoid exercises in which communication is treated only as descriptive reporting. Instead, participants should be encouraged to link communication directly to decisions, protective actions, continuity needs, audience requirements, and changing conditions. This can be operationalised through message-design tasks, internal coordination prompts, and debrief questions that ask not only whether information was shared, but whether it would have helped relevant actors understand what to do and why.

The pilot should also reflect D5.3's **emphasis on inclusion, accessibility, and vulnerability-awareness**. Communication tasks should require participants to consider not only a generic recipient, but also differences in language, digital access, trust, risk familiarity, and capacity to act. D5.3 makes clear that HILP communication must account for vulnerable groups, diverse audiences, and the practical conditions under which people receive and use information. Where appropriate, training injects or discussion prompts should therefore involve audience differentiation, communication to non-local or transient populations, and decisions about layered or analogue fallback communication. This is especially important because communication failures in HILP events are rarely only technical; they often arise because institutions assume that all audiences are similarly reachable, equally able to interpret messages, or equally capable of acting on them.

Finally, communication integration within the pilot should be linked explicitly to the broader WP5 architecture. D5.1 includes a Layered Communication Planning Tool that is intended to convert evidence into practical communication planning arrangements, while D5.3 provides the communication-specific evidence base and guidance that explain what effective HILP communication should look like. The role of D5.2 is different: it is to help ensure that the communication-related requirements identified there are translated into capacities that can actually be practised, exercised, and improved through training. In this sense, the pilot can be

understood as one way of operationalising communication-related readiness, not by replacing communication planning or communication guidance, but by turning them into concrete capabilities for use under HILP conditions.

4.9. Facilitation and Delivery Requirements

The quality of the pilot training will depend not only on module content and competency logic, but also on the way the training is facilitated and delivered. A first requirement is **strong onboarding and framing**. The pilot training should therefore begin with a concise but explicit orientation phase in which facilitators explain the overall purpose of the pilot, the rationale of the competency-based approach, the type of participation expected, and the connection between modules and practical readiness.

A second requirement concerns **group structure and role clarity**. Groups should be designed to balance diversity of perspective with manageability of discussion. Within each group, simple role structures should be made explicit from the outset, for example by identifying a facilitator contact, a rotating spokesperson, and a note-capturing function where needed. This does not require overly rigid role design, but it does require enough structure to avoid confusion and uneven participation.

A third requirement concern is **facilitator preparation**. Facilitators should therefore be briefed not only on content, but also on the purpose of each module, the intended learning outcomes, the kind of discussion or behaviour to encourage, and the criteria by which learning and competency demonstration will later be reflected upon. Facilitation should support participants in thinking differently, not merely keep the training on schedule.

A fourth requirement concern is **plenary design and interaction rhythm**. The pilot should avoid over-reliance on report-back formats that reduce engagement and do little to deepen reflection. Instead, plenaries should be used selectively for cross-cutting comparison, synthesis, and debrief, with facilitators drawing out what different groups experienced in relation to the competency framework rather than simply collecting descriptions of what was discussed.

A fifth requirement concerns **language and accessibility**. Internal feedback from the completed activities noted that English-language introductions and plenaries created barriers for some participants and that switching into the local language significantly improved understanding and engagement. It was also recommended that slides and other materials be translated where appropriate and that language support be considered for external or consortium-level observers. In the context of the pilot training, this means that delivery arrangements should be adapted to participant needs so that language does not become an avoidable barrier to understanding or contribution.

A sixth requirement concerns **energy management and pacing**. The pilot should be designed with realistic durations, balanced activity types, and space for both concentration and reset, especially where the training is compressed into a single day or similarly intensive format.

The pilot must be designed as a learning environment, not only as a content package. In HILP-oriented training, where adaptive readiness, uncertainty-handling, and communication quality are central, delivery conditions are part of the substance of the intervention. The pilot will only be meaningful if participants understand the logic of the exercise, are supported by competent facilitation, can contribute within clear and accessible structures, and have enough interaction and reflection space to connect practical tasks to the broader capability framework. These

requirements should therefore be treated as part of the training design itself, not as a secondary implementation detail.

4.10. Observation, Debrief and Evaluation Framework

The pilot training should include a structured observation, debrief, and evaluation framework to ensure that it functions not only as a delivery activity, but also as a learning and refinement mechanism. In practical terms, this means that the pilot should not only expose participants to HILP-relevant tasks, but should also create a **structured basis for observing which capacities are present, which remain weak, and what kind of follow-up or adaptation is required**.

Observation during the pilot should therefore be organised around the competency architecture developed in Chapter 2 and operationalised through the training modules in Chapter 3. Rather than assessing participants in a narrow performance-management sense, the observation framework should document how the identified competency clusters are activated in practice. This includes whether participants are able to form a shared picture under uncertainty, whether they are able to prioritise across competing demands, whether they can communicate effectively under degraded conditions, whether they recognise continuity thresholds and dependencies, and whether they can coordinate adaptively across roles and functions.

The debrief component should be treated as a **central part of the training design**, not as a short closure at the end of delivery. A structured debrief allows participants and facilitators to identify which competencies were activated, where bottlenecks or misunderstandings emerged, how communication functioned under pressure, and how the training itself should be adjusted. It also creates space to capture capability gaps that may not be visible from outputs alone, including issues of confidence, role clarity, communication logic, trust, or assumptions about continuity and coordination.

The evaluation framework should combine at least **three levels of reflection**. The first level concerns the **competencies** themselves: whether the training design actually activated the intended capacities and whether participants were able to demonstrate the expected behaviours in a meaningful way. The second level concerns the **format and delivery logic**: whether the modular structure, facilitation, pacing, and activity design supported learning, and whether any design features created avoidable barriers to participation or reflection. The third level concerns the **framework** as such: whether the competency architecture appears sufficiently comprehensive, whether some capacities were overemphasised or underdeveloped, and whether any additional needs emerged that should be reflected in a later revision of D5.2.

The pilot should avoid framing the debrief as a simple round of table-by-table reporting. Instead, it should focus on cross-cutting questions linked to the competency clusters and the learning objectives of the training. This does not only improve engagement; it also increases the usefulness of the evaluation, since the aim is not to catalogue what each group discussed, but to identify repeated patterns, shared difficulties, and practical implications for future training and readiness.

4.11. From Piloting to Revision and Uptake

The pilot training should be understood as an intermediate but important stage in the broader WP5 process of translating evidence into practice. Its value lies not only in the immediate development of participant capability, but also in the way it can support revision, refinement, and organisational uptake of the framework proposed in D5.2. This logic is already strongly embedded in D5.1, which presents the WP5 toolbox as a mechanism for turning evidence into planning

action, ownership, and review, and which repeatedly stresses that findings need to be tracked, translated, and revisited if they are to influence preparedness in a meaningful way. The pilot should therefore not be treated as a stand-alone demonstration, but as a structured input into the ongoing development of the deliverable and the wider WP5 architecture.

The first area of uptake concerns the **competency framework** itself. One of the purposes of the pilot is to test whether the framework developed in Chapter 2 is sufficiently clear, relevant, and operational in practice. The training creates a setting in which these competencies can be observed in use, rather than only described conceptually. As a result, pilot findings should be used to assess whether the identified competency clusters capture the most relevant capability areas, whether some competencies require clearer definition or stronger differentiation, and whether any additional competency needs emerge through practice. This would allow the deliverable to **move from a purely proposed framework toward one that has been exposed, at least in initial form, to practical validation.**

The second area of uptake concerns the **training design** itself. D5.1 makes clear that capability-building interventions should be chosen in relation to the nature of the capability gap, and that organisations should think in terms of suitable intervention types, desired behaviours, and review points. The pilot creates an opportunity to evaluate whether the proposed module sequence, activity design, and facilitation approach are fit for purpose. **Findings from the pilot should therefore be used to revise the structure, pacing, content balance, and delivery logic of the training package**, including whether some modules require more practical rehearsal, whether communication elements need stronger integration, whether role-specific differentiation is needed, and whether the final integrated exercise and the debrief are producing the intended value. In this sense, the pilot is part of the refinement of the training product, not simply its first implementation.

The third area of uptake concerns the **relationship between D5.2 and the other WP5 deliverables**. The pilot should help clarify how evidence translated in D5.1 into planning tools and adaptive-readiness logic can be moved further into practical capability development. For example, D5.1's "Training Needs from Evidence" tool explicitly asks what people, teams, or organisations need to learn or rehearse, what kind of intervention is suitable, and when review should take place. The pilot provides a direct opportunity to operationalise that logic and to show how a competency-based training package can function as one practical response to evidence-derived training needs. **In this way, the pilot can strengthen the bridge between D5.1's planning uptake logic and D5.2's capacity-development focus.**

A similar link exists with D5.3. **Communication-related tasks and observations from the pilot can support the practical interpretation of D5.3's communication guidance**, particularly where the training engages internal coordination, uncertainty communication, audience-aware guidance, and degraded communication conditions. D5.3 repeatedly argues that effective HILP communication must be actionable, inclusive, transparent, and continuous across preparedness, response, recovery, and learning. The pilot can help show what these requirements mean in practice for participants who must communicate under pressure, and how communication-related capacities interact with other forms of adaptive readiness. Pilot findings should therefore also be able to inform the way communication-related competencies are framed and integrated in future versions or related outputs, without duplicating the communication-specific scope of D5.3.

The fourth area of uptake concerns **future organisational use**. D5.1 repeatedly stresses that tools and findings become meaningful only when they are assigned owners, linked to actions, and revisited over time. The same should apply to D5.2. The pilot should generate practical insight into who needs what kind of development, which modules or competencies are most relevant for which participant groups, and what kinds of follow-up actions are needed to maintain or extend capability-building work. These outcomes could support future use of the training package in later

AGILE activities or in related organisational contexts, and they can also help identify where shorter follow-up modules, communication-focused sessions, leadership-focused sessions, or continuity-focused sessions may be more useful than a full repeat of the entire pilot format. This would make the pilot more consistent with D5.1's broader idea of a practical uptake mechanism rather than a one-off exercise product.

These revision and uptake pathways reinforce the role of the pilot as a practical and reflective mechanism within WP5. **It is not a final product in itself, but a structured way of translating evidence into capability development, testing whether that translation is meaningful, and identifying how the framework, the training package, and their relationship to planning and communication guidance should evolve.** In this way, the pilot contributes to the wider WP5 ambition of ensuring that AGILE evidence leads not only to analysis, but also to learning, adaptation, and stronger preparedness for HILP events.

5. Conclusion

This deliverable has argued that preparedness for High-Impact, Low-Probability (HILP) events requires a different understanding of capacity from that used in more conventional preparedness approaches. Because HILP events are rare, difficult to anticipate, and often characterised by cascading disruption across interconnected systems, preparedness cannot depend only on hazard-specific plans or on the existence of resources in reserve. Instead, the central preparedness question becomes whether essential functions can be preserved, whether action can remain coordinated, and whether systems, organisations, and individuals can adapt under uncertainty, degraded conditions, and severe operational stress. For that reason, the deliverable has framed HILP capacity needs in terms of functionality under disruption rather than likelihood of a particular initiating event.

A key conclusion of the deliverable is that the distinction between capacity, capability, and capacity development is fundamental for HILP readiness. The presence of plans, staff, equipment, data systems, or governance arrangements does not by itself ensure effective action. What matters equally is the capability to mobilise, adapt, and coordinate those resources when routine assumptions fail. Capacity development is therefore not reducible to training, procurement, or procedural compliance alone. It is a longer-term effort to strengthen the conditions for resilient action across systemic, organisational, and individual levels. This conclusion reinforces the need to treat preparedness as a developmental and adaptive process rather than as a static state of readiness.

The competency framework developed in Chapter 2 provides the main analytical outcome of the deliverable. By drawing on the strategic logic of D5.2, the adaptive-readiness orientation of D5.1, the communication evidence of D5.3, and recurring findings from AGILE stress-test activities, the framework translates evidence into a structured account of what HILP readiness requires in practice. The four core domains *cognitive, operational, technical and continuity, and communicative* show that readiness under HILP conditions depends on more than technical knowledge or procedural correctness. It also depends on the ability to interpret evolving disruption, make defensible decisions under incomplete information, sustain coordination across boundaries, preserve essential functions under degraded infrastructure, and communicate in ways that support understanding, trust, and action.

The cross-cutting themes of adaptation rather than compliance, cross-sector orientation, and learning and reflective practice further clarify the character of HILP competence. They show that the framework should not be understood as a closed or static checklist. Rather, it is intended as a dynamic platform that helps organisations and practitioners observe, rehearse, refine, and strengthen capability over time. This conclusion is consistent with the wider argument of the deliverable that HILP conditions often break the assumptions on which routine scripts are built,

and that competence therefore includes the ability to revise roles, functions, communication, and decisions while preserving coherence of action.

The pilot training presented in Chapter 3 translates this framework into a practical capacity-development architecture. Its value lies not only in providing a structured learning environment, but also in creating an intermediate mechanism between evidence and uptake. The proposed modules on systemic sensemaking, communication and coordination, continuity of critical functions, and adaptive coordination are designed to make the identified competencies visible in use and open to observation, debrief, and refinement. The integrated exercise and evaluation framework further support the conclusion that HILP capability development should be practice-oriented, modular, communication-aware, and closely linked to iterative learning rather than treated as a one-off awareness activity.

The deliverable also concludes that communication must be treated as integral to HILP readiness rather than as an external or secondary consideration. Throughout the document, communication is presented as part of how actors understand disruption, explain uncertainty, sustain trust, support coordination, and orient action under conditions of overload and degraded systems. This reflects the evidence base drawn from D5.3 and the recurrent AGILE findings on communication fragility, degraded coordination, and the need for layered, audience-aware, and actionable communication. In this sense, one of the major conclusions of the deliverable is that communication competence is inseparable from wider adaptive readiness.

Another important conclusion concerns the role of the pilot in revision and uptake. The deliverable presents the pilot not as a finished end product, but as a structured mechanism through which the competency framework, the training design, and their relationship to wider WP5 planning and communication logic can be tested and improved. The pilot can therefore support practical validation of the competency model, strengthen the bridge between evidence and capability development, and generate insight into what kinds of follow-up development are most relevant for different participant groups and organisational settings. This reinforces the wider WP5 objective of ensuring that AGILE evidence contributes not only to diagnosis and analysis, but also to learning, adaptation, and stronger preparedness practice.

In conclusion, D5.2 shows that HILP preparedness is best understood as an integrated capacity to preserve essential functions, coordinate across boundaries, communicate meaningfully, and adapt under uncertainty and degraded operating conditions. Its contribution lies in moving from evidence about recurrent pressures and vulnerabilities toward a practical model of competency-based readiness and a pilot training architecture capable of supporting further refinement and uptake. As such, the deliverable strengthens the role of WP5 as a bridge between AGILE evidence and practical preparedness action, and it provides a foundation for continued work on adaptive capability development for severe and uncertain disruption.