

DGMR
MATERIAL RESSOURCES

23 January 2026



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International Explosives Safety Summit and Exposition (IESSE)

A digital approach to safer munition storage and streamlined permitting process

From Excel-based expertise to a NATO-interoperable ESSP tool

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Agenda

Context

Hidden complexity of QD

Goals

Solution

Roadmap

Conclusion

Context

Post–Cold War ‘peace dividend’ led to:

Gradual erosion of critical expertise in ammunition management

Reduction in ammunition stockpiles across many NATO nations

Today:









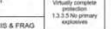
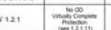
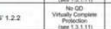
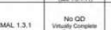



Munition is back









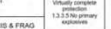
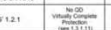
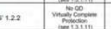
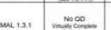



Interoperability & interchangeability: focus on acquisition initiatives









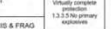
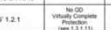
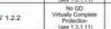
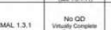



Downstream implications for storage safety and permitting









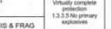
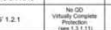
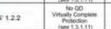
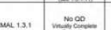



- Hundreds of PES–ES combinations
- Conditional modifiers
- Embedded risk logic









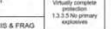
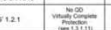
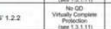
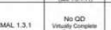



PES ID: _____ **NEQ/MCE CAPACITY CALCULATION SHEET** *These calculations are based on ASTM-16C version 1.0 (DRAFT version)*


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Primary goal: harmonized safety calculations

- Standardized framework
- Cross-border interoperability
- Credibility of safety decisions

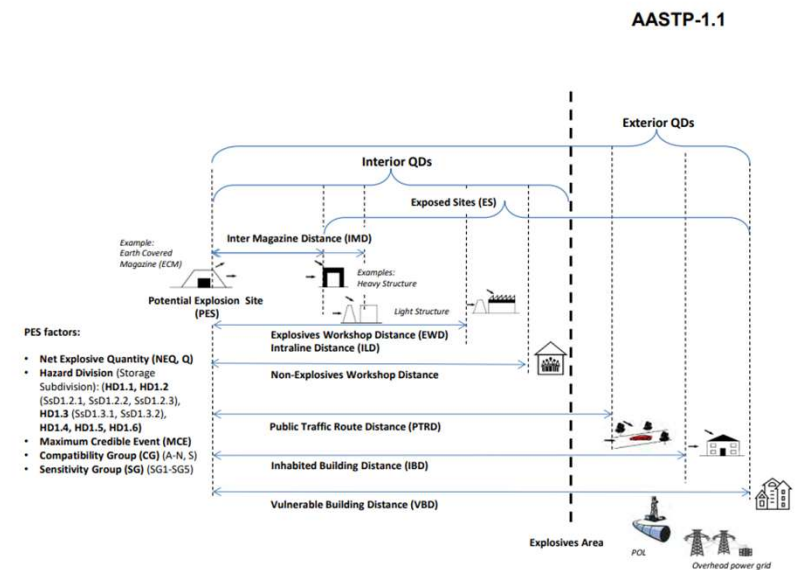


Figure 1 - Illustration of AASTP-1 QD [4]. Not to scale.

Secondary goal: leverage for permitting processes

Why harmonization matters for permitting

- Environmental permits as bottleneck
- QD as benchmark
- Transparency towards regulators

Four recurring permitting architectures in NATO nations

1. Full civilian regime
2. Defense-specific equivalent
3. Grey zone / partial exemption
4. NATO standard integrated in civilian law

Solution: layered digital architecture

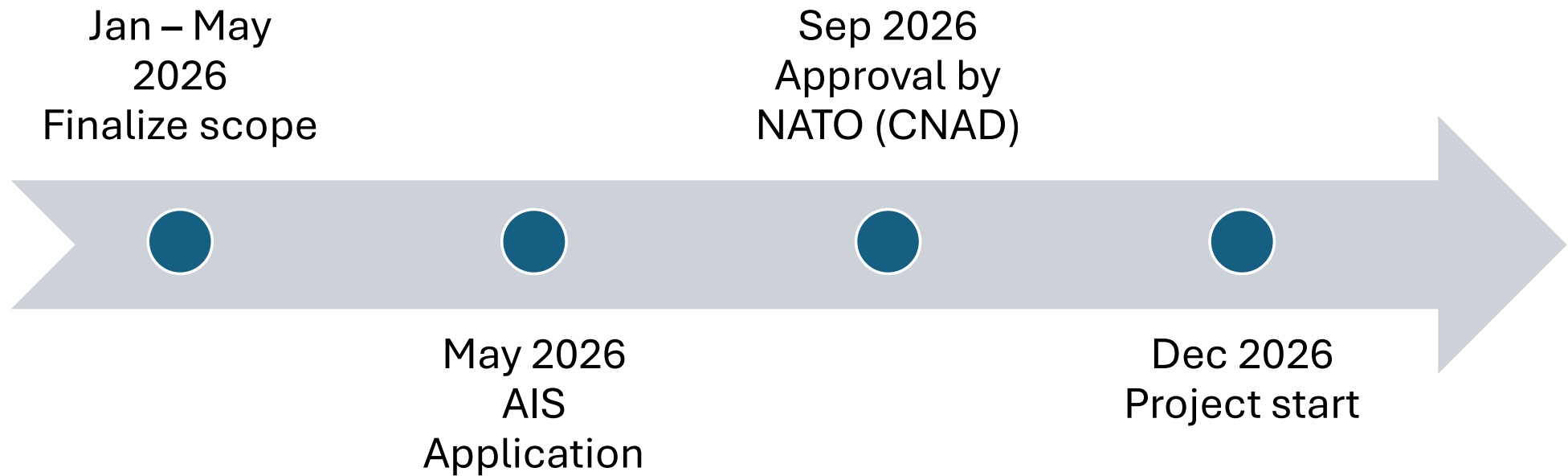
- NATO-compliant reference version
- National adaptations
- Long-term sustainability & governance

Layer 1:
NATO Reference Calculation Core

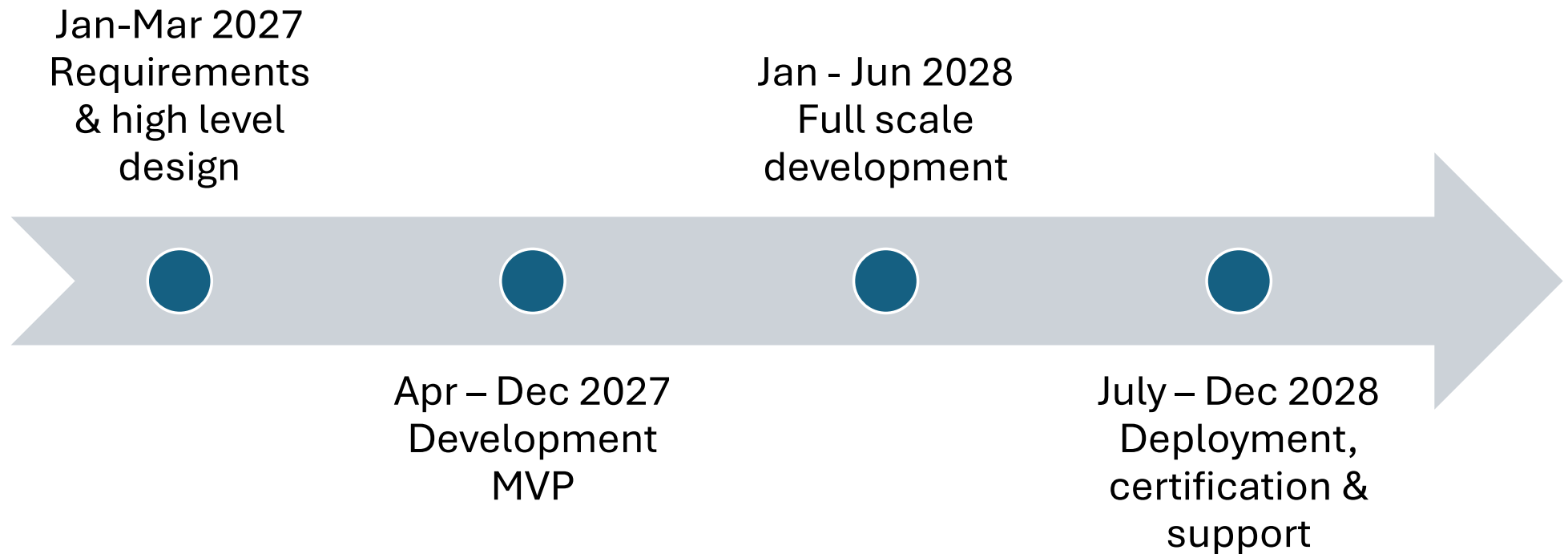
Layer 2:
National Implementation Architecture

Layer 3:
Local Extensions & Services

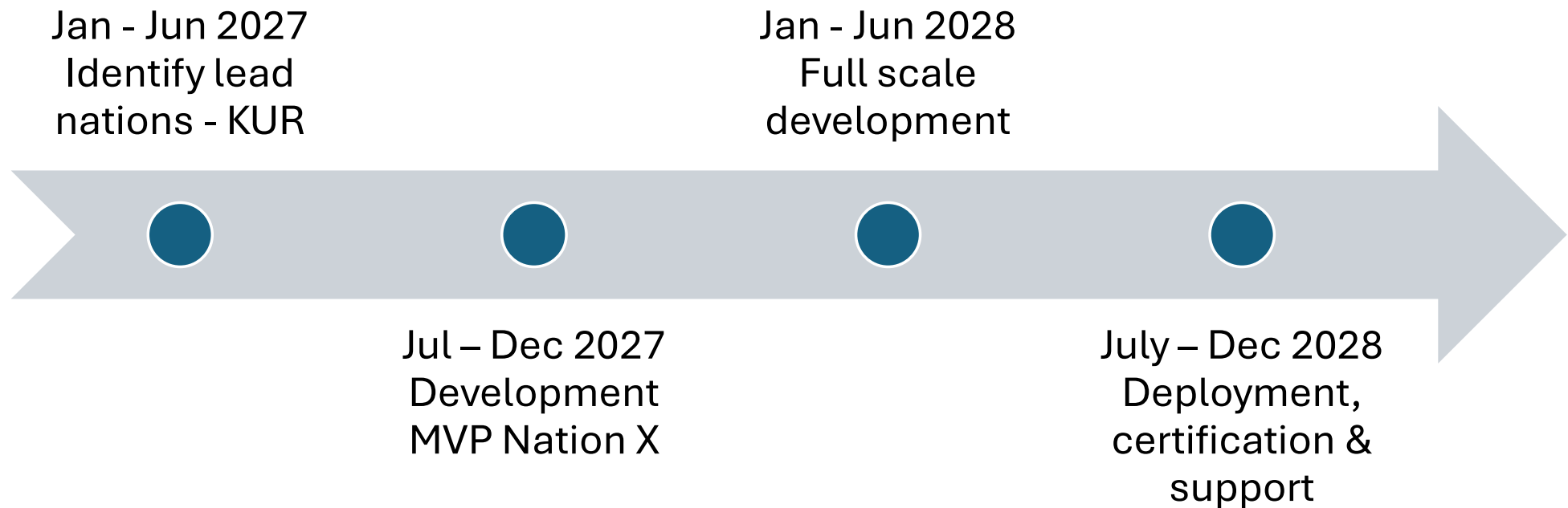
Layer 1: NATO Reference Calculation Core ^(1/2)



Layer 1: NATO Reference Calculation Core (2/2)



Layer 2: National implementation (indicative timing / subject to NATO governance)



Conclusions

- Safer storage
- Interoperability
- Traceable / consistent / auditable
- Institutional memory