robotina

Power Defence

Evropski obrambni sklad (EDF)

Slovenski informativni dan 2026

Devid Palčič –direktor Robotina, SENTINEL projekt, DIANA izkušnja

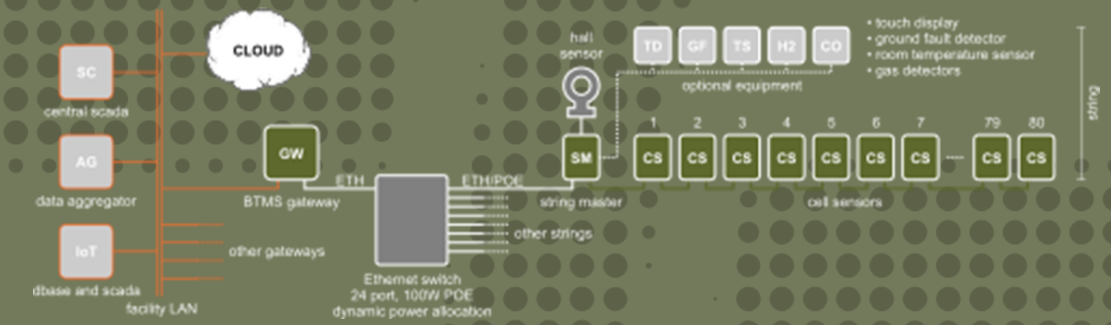
Robotina iz avtomatike v DUAL USE rešitve in izdelke

1. Nadgradnja DEA + HEE → Hydrogen (hibridni napajalni sistem)

2. Device EMS – Upravljanje z napravami (DEA, HVAC, …)

3. BTMS → FortiCell

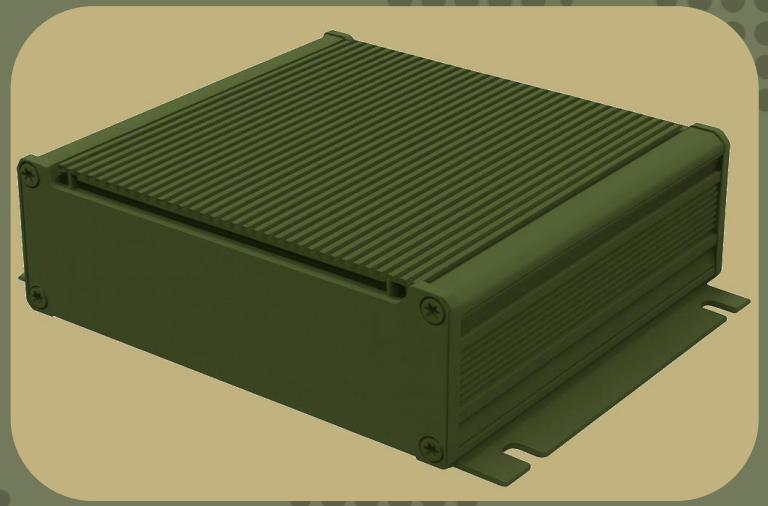
- CIVILNA RABA: DATA Centri, TELECOM, Letališča, Banke,…
- VOJAŠKA RABA



DUAL USE in izključno DEFENCE rešitve in Izdelki (prenos znanja iz civilnega okolja)

4. PDU (Pametna razdelilna omarica)

- MIL 3071 za interoperabilnost
- Upravljanje Bremen glede na namen in pogoje



5. TMC (Tactical Microgrid Controller)

- MIL 3071
- Upravljanje z mikroomrežjem na taktičnem robu
- DDS komunikacija

OPOMBA: razvijamo skupaj s partnerjem Smartis

ZAKAJ DIANA?

NATO DIANA – Cilji programa

1. Prilagoditev inovativnih rešitev za dual-use uporabo

Nadgradnja tehnologij za uporabo v civilnem in obrambnem okolju

2. Podpora pri dostopu do obrambnega trga

Pomoč pri povezovanju z obrambnimi kupci in partnerji

3. Financiranje rasti podjetij

Podpora pri razvoju, testiranju in skaliranju tehnologij

Podpora, ki jo omogoča NATO DIANA

Dostop do obrambnega ekosistema

- Mreženje z deležniki v državah NATO:
  - ministrstva za obrambo
  - tradicionalni obrambni dobavitelji
  - vojaške enote
  - enote civilne zaščite

Testiranje in validacija tehnologije

- TEVV – testing, evaluation, validation, verification (financirano)
- OPEX – operational experimentation v realnem okolju

Pospešena uvedba rešitev

- RAS – Rapid Adoption Service za hitrejšo implementacijo tehnologij

Podporni programi

- Dostop do pravne podpore
- Mentorstvo in tehnična podpora strokovnjakov

Financiranje

- Povezovanje z VC investitorji (venture capital) za nadaljnjo rast

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NATO DIANA
Defence | Innovation | Adoption

DIANA INNOVATOR

PART OF THE DIANA NETWORK

Robotina: FORTICELL - Tactical Battery Management and Monitoring System

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Power Defence

FORTICELL ensures uninterrupted battery power supply through AI-powered diagnostics and early fault alerts.

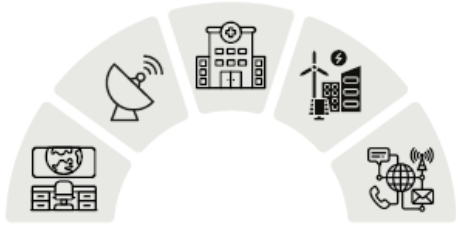
DEMONSTRATION

- Demonstration by 3D app presentation for military purpose
- Visual materials
- Cell sensor sample

BiQ

USE CASES - in all environments where batteries are used

- Mobile command posts
- Radar installations
- Field hospitals
- Tactical microgrids
- Communication systems



FORTICELL ADVANTAGES

- Improves energy resilience and reliability
- Battery status, real-time diagnostics, history and AI based predictions
- Preventing battery fire and unexpected failures
- Predictive maintenance

80% reduction of any battery chemistries failures by using AI predictive insights

30% extension of average battery lifetime

Robotina is a control technology company with 35+ years of experience delivering reliable solutions for mission-critical environments.

Company focuses on ensuring safe, autonomous, resilient and predictable operation of energy and other systems in defence and other critical infrastructure.

- In-house innovative R&D team
- Already deployed in civil use (Data Centers, airports,...)
- MOD references for other solutions and projects
- DEMO ready

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DIANA INNOVATOR

PRODUKT

Visual
Relevance
Advantages
POC

AKTIVNOSTI

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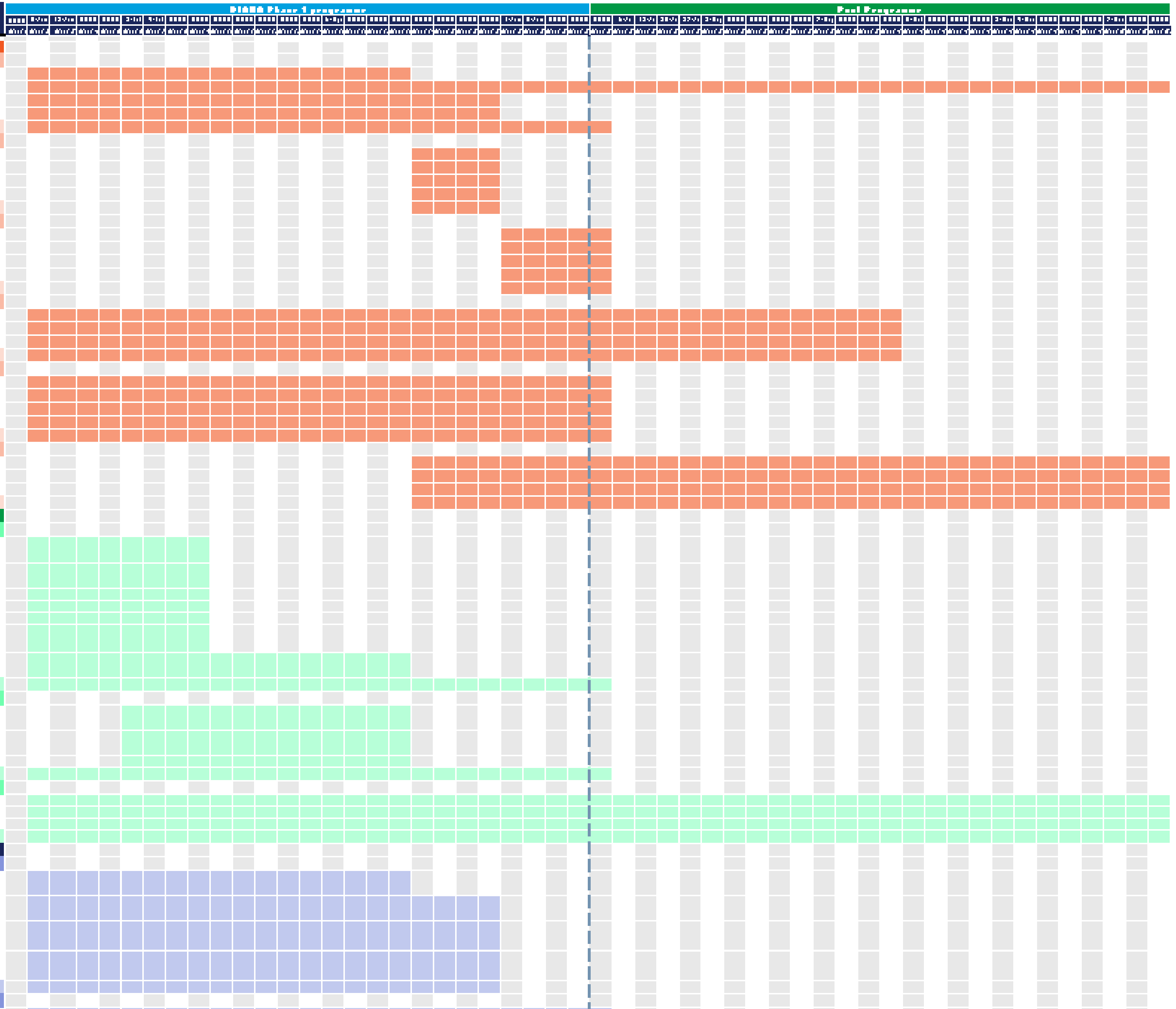
NATO DIANA — Defence | Innovation | Adoption

ROBOTINA — **Innovator Roadmap**

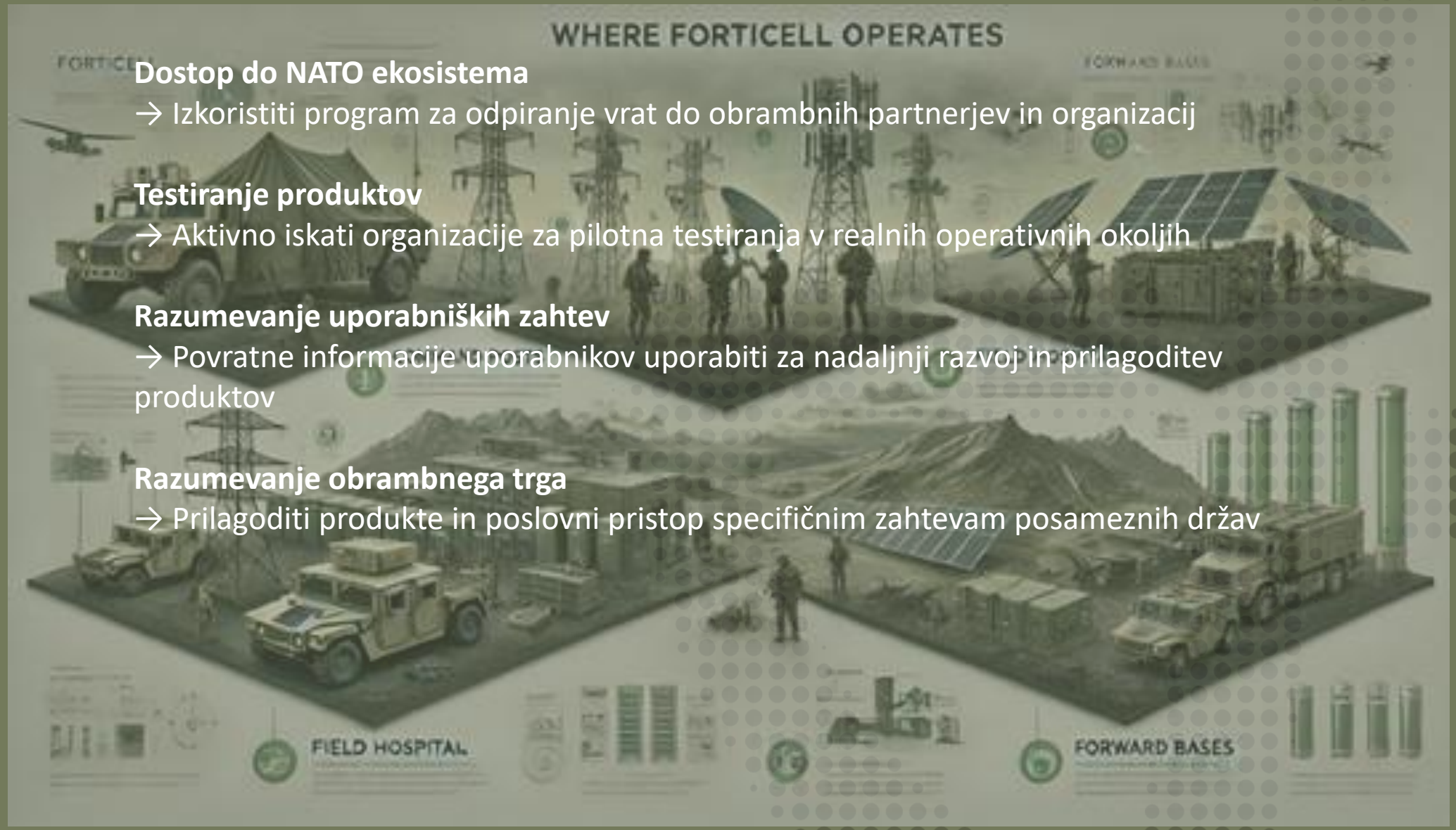
*Note: If you insert a new row to include further deliverables per category, **please do so in-between the already existing items**, rather than below.*

Ambition	Task	KPIs / Deliverable (if any)	Task status	Owner	Notes	Task Start (Date)	Task End (Date)	Actual End (Date)
Technology and Testing								
	Goal 1: Requirements definition and standard mapping							
Over the next 12 months we aim to achieve TTRL5 - adapt and improve Porticell for the defence use	Collect all applicable standards (NATO STANAGs, MIL-STDs, DIN/ISO norms)		In progress		need help at this	1-Jan	30-Apr	
	Conduct stakeholder interviews with end users, regulatory officers and engineering leads		In progress		Interviews are p	1-Jan	30-Dec	
	Define functional, operational and certification requirements at system and subsystem levels		Initiated		need help at this	1-Jan	30-May	
	Map mission objectives and performance parameters against compliance parameters		Planning			1-Jan	30-May	
	Validation activity for Goal 1: List of mission objectives and performance parameters against compliance parameters		Planning			1-Jan	30-Jun	
	Goal 2: Gap identification and assessment							
	Compare current capabilities, designs, or prototypes to standard and requirement benchmarks		Planning			30-Apr	30-May	
	Identify technical, testing, or documentation gaps (e.g., missing certification steps, environmental testing gaps)		Planning			30-Apr	30-May	
	Classify gaps by criticality: must-close before testing, can mitigate through design iteration, or monitor during development		Planning			30-Apr	30-May	
	Document risks associated with each gap and link them to mitigation actions in a risk register		Planning			30-Apr	30-May	
	Validation activity for Goal 2: List of gaps classified by criticality.		Planning			30-Apr	30-May	
	Goal 3: Concept Design Integration							
	Translate requirements and gap findings into initial system design specifications		Planning			30-May	30-Jun	
	Develop design trade-off options balancing performance, cost, and compliance		Planning			30-May	30-Jun	
	Align subsystem design (hardware, software, integration) to the identified standards and testing needs		Planning			30-May	30-Jun	
	Begin early modelling and simulation to validate the design approach before prototyping		Planning			30-May	30-Jun	
	Validation activity for Goal 3: List of system design specifications		Planning			30-May	30-Jun	
	Goal 4: Testing Framework Definition							
	Define the test architecture covering environmental, operational, and safety testing requirements		Planning			1-Jan	30-Sep	
	Identify accredited test facilities and required certifications		Planning			1-Jan	30-Sep	
	Prepare a phased test plan aligning with development milestones (concept validation → prototype verification → operational demonstration)		Planning			1-Jan	30-Sep	
	Validation activity for Goal 4: Test plan		Planning			1-Jan	30-Sep	
	Goal 5: Roadmap development							
	Build a structured timeline combining design, test, and certification workstreams		Planning			1-Jan	30-Jun	
	Assign accountability across engineering, quality, and compliance teams.		Planning			1-Jan	30-Jun	
	Integrate feedback loops for requirement reassessment and design improvement after each test phase		Planning			1-Jan	30-Jun	
	Finalize a governance model for progress tracking and approval checkpoints		Planning			1-Jan	30-Jun	
	Validation activity for Goal 5: Governance model for progress tracking and approval checkpoints		Planning			1-Jan	30-Jun	
	Goal 6: Validation and iteration							
Current TTRL:4 Technology validated in lab: subsystems integrated; repeatable lab results achieved; TEVV planning begins.	Conduct design reviews with military end users and testing authorities		Planning			30-Apr	31-Dec	
	Iterate based on test outcomes or evolving standards		Planning			30-Apr	31-Dec	
	Document lessons learned for system sustainment and future concept development		Planning			30-Apr	31-Dec	
	Validation activity for Goal 6: Test results comparison against Goal 1		Planning			30-Apr	31-Dec	
Commercial & Adoption								
	Goal 7: Value Proposition & Storyline Development							
The intention is to strengthen defence adoption pathways and to continue business on civilian market.	Quantify concrete system effects: Select 2-3 target systems (e.g., radar) and model failure reduction using your data — e.g., "reduces predictive maintenance false negatives by 40%, avoiding 15% downtime on platforms"		Completed			1-Jan	1-Mar	
	Build the storyline: Frame as "PORTICELL prevents mission-critical failures before they cascade — proven in civil ops, now hardened for defence robustness".		In progress		Cluster 5	1-Jan	1-Mar	
	Tailor to military buyer psychology: Emphasize risk reduction, interoperability, and procurement simplicity		In progress		Cluster 5	1-Jan	1-Mar	
	Test storyline in internal rehearsals or gather mentor feedback on your sales story.		In progress		Cluster 5	1-Jan	1-Mar	
	Create 1-pager value proposition for defence Customer Mapping (5-10 Dimensions)		In progress		Cluster 5	1-Jan	1-Mar	
	Segment and prioritize: Civil: fire services, logistics, infrastructure (e.g. civil protection agencies); Defence: army logistics, navy maintenance, air force ground support — aim for 5 civil + 7 defence contacts for market development.		In progress			1-Jan	1-Mar	
	Identify more entry points: innovation units, or primes teams (Rheinmetall, Hensoldt) as warm intros — avoid direct MoD cold calls initially.		In progress			1-Jan	30-Apr	
	Validation activity for Goal 7: Identified Value proposition & Storyline		In progress			1-Jan	30-Jun	
	Goal 8: First Contacts to Military Structure discovery discussions / interviews							
	Use 30-min template — 1) Validate use case fit (system failures they face); 2) Quantify your impact (e.g. "how many failures/year?"); 3) Map decision process/budget; 4) Secure intro to next stakeholder or pilot commitment.		Completed			1-Feb	30-Apr	
	Prepare contact cadence: Week 1-2: 3-5 LinkedIn/targeted emails with 1-pager value prop; Week 3-4: 2-3 discovery calls with officers/system integrators		In progress			1-Feb	30-Apr	
	Track and convert: Log in CRM with columns: Segment, Pain Point, Qualified Value, Next Step (e.g. demo, pilot LOI)		In progress			1-Feb	30-Apr	
	Validation activity for Goal 8: 1 LOI from potential customers (primes, partners in defence)		In progress			1-Jan	30-Jun	
	Goal 9: Validate dual-use markets							
Current CARL:4 Validation of Use Cases Across Domain(s)	Engage defence, civil protection, and critical infrastructure stakeholders across NATO and allied countries		In progress		internal alumni, d	1-Jan	30-Dec	
	Execute pilot demonstrations in representative environments Documented operational feedback and refined value proposition		Planning			1-Jan	30-Dec	
	Prepare tailored pilot materials		In progress			1-Jan	30-Dec	
	Validation activity for Goal 9: ≥ 2 validated end-users		Initiated			1-Jan	30-Dec	
Business & operations								
	Goal: Gap evaluation for modification - Clarify modification scope							
	Define what changes from the existing product/operation (features, robustness, data handling, security, lifecycle support) and which defence contexts it must serve		Planning			1-Jan	30-Apr	
	Map current state vs. defence expectations: Compare today's performance, processes, and documentation with defence buyer expectations (e.g. robustness, cyber, quality, export control, data sovereignty)		Planning			1-Jan	30-May	
	Use the 1 extra FTEs explicitly: Assign one FTE to technical/compliance gaps (standards, testing, security) and one internal FTE to business/operational gaps (contracting, supply chain, support)		Planning			1-Jan	30-May	
	Prioritize gaps: Classify each gap as critical (release blocker), important (close before scale), or opportunistic (improves competitiveness) and link each to owner, timeline, and budget.		Planning			1-Jan	30-May	
	Validation activity for Goal: List of prioritized gaps with a classification		Planning			1-Jan	30-May	
	Goal: Roadmap for dual use business operation							

Legend: Task Duration, Extension, Milestone



UGOTOVITVE IN PRILOŽNOSTI



Dostop do NATO ekosistema
→ Izkoristiti program za odpiranje vrat do obrambnih partnerjev in organizacij

Testiranje produktov
→ Aktivno iskati organizacije za pilotna testiranja v realnih operativnih okoljih

Razumevanje uporabniških zahtev
→ Povratne informacije uporabnikov uporabiti za nadaljnji razvoj in prilagoditev produktov

Razumevanje obrambnega trga
→ Prilagoditi produkte in poslovni pristop specifičnim zahtevam posameznih držav

SENTINEL

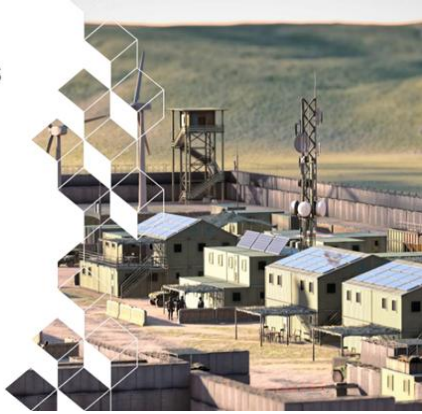
- SENTINEL je evropski raziskovalno-razvojni projekt za razvoj naprednih energetskih rešitev za vojaške baze.
- Cilj projekta je povečati energetsko neodvisnost, operativno učinkovitost in odpornost vojaških operacij.
- Razvija trajnostne energetske tehnologije, pametna omrežja in digitalne rešitve za upravljanje energije.
- Rešitve bodo testirane v realnih vojaških pogojih in različnih podnebjih.
- Projekt združuje več kot 40 partnerjev iz Evrope
- Projekt koordinira TECES, financira pa ga Evropski obrambni sklad.

SENTINEL | Sustainable Energy Capabilities for Enhanced Military Camps and Operations

KEY CHALLENGE

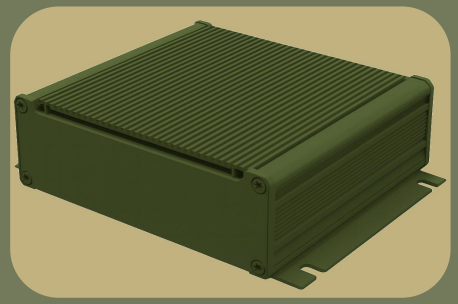
- Be able to operate in all climate conditions
- Interoperable with EU armed forces
- Flexible in design and operation
- EDTIB autonomy

- SENTINEL Solutions
  - Proven Key Energy Capabilities
  - High Resilience and Deployability
  - Market ready in 2030



ZAKAJ SENTINEL ZA ROBOTINO

- PARTNERJI.
- POPOLNOMA SKLADNO Z NAŠIMI INTERESI IN SPOSOBNOSTMI (DEVICE EMS + TMC)
- DOSTOP DO STRANK - TRG
- MOŽNOST TESTIRANJA
- DOSTOP DO ZNANJA



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