



ARTILLERIE INRICHTINGEN ARMAMENTS BV

CAPABILITY PROPOSAL | NETHERLANDS MINISTRY OF DEFENCE

ESAD | SAFE & ARM SYSTEMS



STRATEGIC COOPERATION WARHEADS MEET NEXT-GEN DRONES

Combining AIA's advanced **warhead development** expertise
with battle-proven **interceptor** and **autonomous drone platforms**.



ADVANCED
WARHEADS



BATTLE-PROVEN
PLATFORMS



NEXT-GENERATION
DEFENSE

TRANSFORMING PLATFORMS INTO PRECISION EFFECTORS

A Netherlands-led programme built on field-proven technology

Artillerie Inrichtingen Armaments BV (AIA), together with experienced international OEM partners, offers modular weaponization kits for UAV, UGV, USV, loitering munition and missile applications. AIA provides Netherlands-based programme leadership, interface management, integration and lifecycle support.



SAFE & ARM

MIL-STD-referenced fuzes and safety architecture, with multiple physical arming conditions and controlled activation.



MISSION MODULARITY

Pre-configured fragmentation, shaped and breaching effectors for different target sets and platforms.



DUTCH INTEGRATION

A Netherlands-based point of contact for engineering, ICDs, testing, configuration control and lifecycle support.

PROGRAMME SCOPE

- Payload and effector architecture
- Fuze, safety and arming systems
- Mechanical, electrical and data interfaces
- UAV / UGV / USV / loitering / missile integration
- Safety case, test and qualification planning
- Demonstrators and mission trials
- Industrialisation and configuration control
- Training, MRO and lifecycle support

PROVEN BASELINE Decades of hands-on experience; products are already deployed by foreign Ministries of Defence.

MISSION-SELECTABLE EFFECTOR OPTIONS



MODULAR WEAPONIZATION ARCHITECTURE

A complete end-to-end effector package with controlled interfaces

FROM MISSION COMMAND TO CONTROLLED EFFECT

01

MISSION SYSTEM

Target data, mission and release conditions

02

COMMAND & TRIGGER

Encrypted user command or external trigger

03

SAFE & ARM

Multiple physical arming conditions

04

FUZE & EFFECTOR

Mission-selected fuze and warhead

05

PLATFORM INTERFACE

Mechanical, electrical and data ICD

PLATFORM FAMILY



MANNED



UAV



UGV



USV



MISSILE

DESIGN PRINCIPLES

MODULAR

A common architecture with mission-specific effector and fuze variants.

REVERSIBLE

Fuze options support reversible configuration for platform integration.

DEFINED INTERFACES

Controlled mechanical, electrical and data interface definitions.

QUALIFICATION LED

Design decisions are linked to safety evidence and qualification.

REPRESENTATIVE SAFE-AND-ARM HARDWARE



MULTI-DOMAIN MISSIONS

Effector selection aligned with target set, carrier constraints and operational environment

The architecture supports a broad range of tactical missions. The final configuration is defined per programme, based on required effect, carrier limitations, safety conditions and collateral-effect constraints.

01

ANTI-PERSONNEL



Fragmentation effectors for infantry support, personnel neutralisation, vehicles, military assets and interception.

2-INCH | 4-INCH

02

ARMoured VEHICLES



Shaped effectors for top-attack against light armoured vehicles and protected military positions.

LAV | LAV + FRAG

03

URBAN WARFARE



Precision breaching for walls, structures and military assets with controlled collateral effect.

BREACHING EFFECTOR

04

NAVAL TARGETS



Effectors for USV and coastal operations, configured for the selected naval target set.

USV | COASTAL

MISSION-CONFIGURED PACKAGE

Effector, fuze, platform interface and release conditions are managed as one controlled configuration.

EFFECTOR SERIES | TECHNICAL OVERVIEW

Modular pre approved configurations for fuze and warhead options



Modular pre approved configurations for various fuze and warhead options, without supply chain restrictions

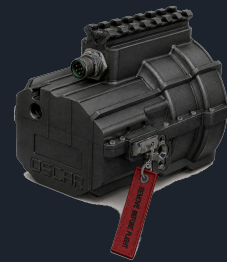
FRAGMENTATION EFFECTORS Anti personnel, vehicles, military assets and interception.

2"



Weight	0.5 kg
Explosive	0.25 kg
Dimensions [mm]	Ø50X150
Effective range	0.5-5 m

4"

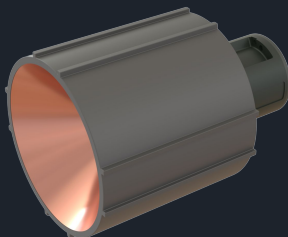


Weight	0.85 kg
Explosive	0.4 kg
Dimensions [mm]	Ø70X150
Effective range	0.5-8 m

SHAPED AND BREACHING EFFECTORS

LAV

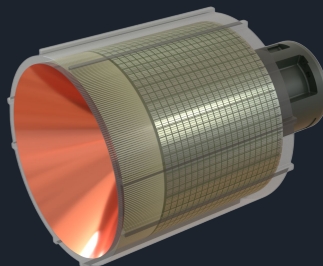
Neutralizing and destroying light armored vehicles and protected military positions.



Weight	1.3 kg
Explosive	0.75 kg
Dimensions [mm]	Ø90X160
Penetration [mm]	50-200

LAV+FRAG

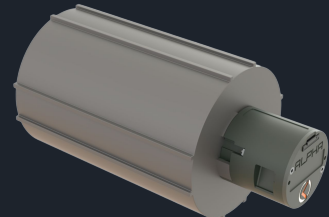
Neutralizing and destroying light armored vehicles and protected military positions.



Weight	2.2 kg
Explosive	0.75 kg
Dimensions [mm]	Ø100X160
Penetration [mm]	50-200

BREACHING

Urban warfare with low collateral damage - walls breaching and military assets.



Weight	1.8 kg
Explosive	1.5 kg
Dimensions [mm]	Ø110X160

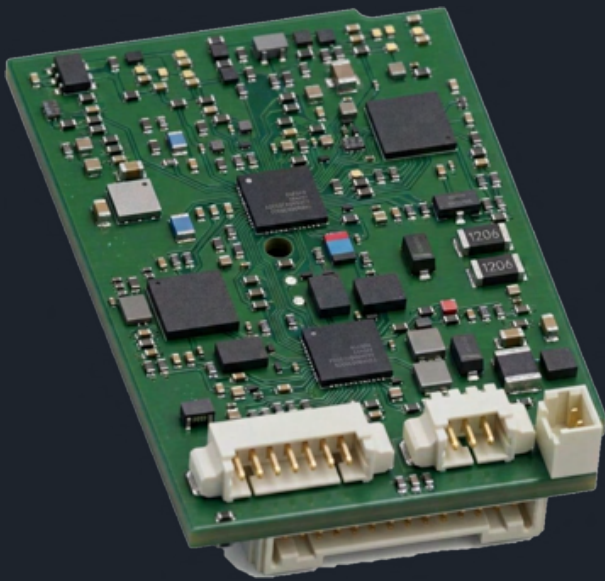
SAFETY BOARD | TECHNICAL OVERVIEW

The "Brain" Behind Safe lethality



Engineered with a dynamic, heterogeneous, dual-path redundancy safety architecture to guarantee mission integrity.

SAFETY CONTROL ELECTRONICS



COMPATIBILITY

- Explosive fuzing systems
- Remote weapon stations (RWS)
- Launch safety systems

TECHNICAL DATA

DIMENSIONS

30.5 X 46.3 X 10 mm

COMMS

RS232, I2C, UART, SPI, dry contacts

POWER

7-30V Input

ARM

Up to 3 actuators (6V, 3A)

FIRE

28V pulse



ALPHA & BRAVO FUZE SERIES | TECHNICAL OVERVIEW

Electromechanical and electronic safe-and-arm device options

ALPHA FUZE

Electromechanical



Diameter	Ø50 mm
Length	50 mm
Weight	115 gr
Safety pin (optional)	Manual or bore rider configuration

BRAVO FUZE - ESAD

EFI / EBW - tandem and zero delay detonation



Length	64 mm
Width	50 mm
Thickness	30 mm
Weight	90 gr
Fast activation	Trigger input - less than 1 µs

SHARED CHARACTERISTICS - ALPHA AND BRAVO

Designed with multiple options to support versatile missions. Available in a reversible configuration.

ARMING PHYSICAL CONDITIONS	Encrypted user commands, umbilical cord, acceleration, direction, vibration and time delay combinations
ACTIVATION - FIRE	Multi-directional Impact and/or External Trigger input and/or Encrypted user command
SAFETY FEATURES	Normally safe, EMI insensitive, External sensor input optional
REFERENCE STANDARDS	MIL-STD-1316, STANAG 4187, MIL-STD-331, MIL-STD-810

CERTIFIED WEAPONIZATION KIT INTEGRATION

Effector, fuze, safety electronics and carrier interface engineered as one package

AIA integrates the selected effector, fuze and safety electronics with the carrier platform through a controlled Interface Control Document. Integration evidence covers mechanical, electrical, data, safety, environmental and operational interfaces.

SIX INTEGRATION LAYERS

01

MECHANICAL

Envelope, weight, centre of gravity, mounting and separation

02

ELECTRICAL

Power, connectors, firing circuit and interlocks

03

DATA & COMMAND

Protocol, command logic, encryption and logging

04

SAFETY

Hazard analysis, inhibits, arming and safe separation

05

ENVIRONMENT

Shock, vibration, temperature and EMI/EMC

06

CONOPS & HMI

Operator workflow, rules of engagement and abort logic



INTEGRATED EFFECTOR CONFIGURATION

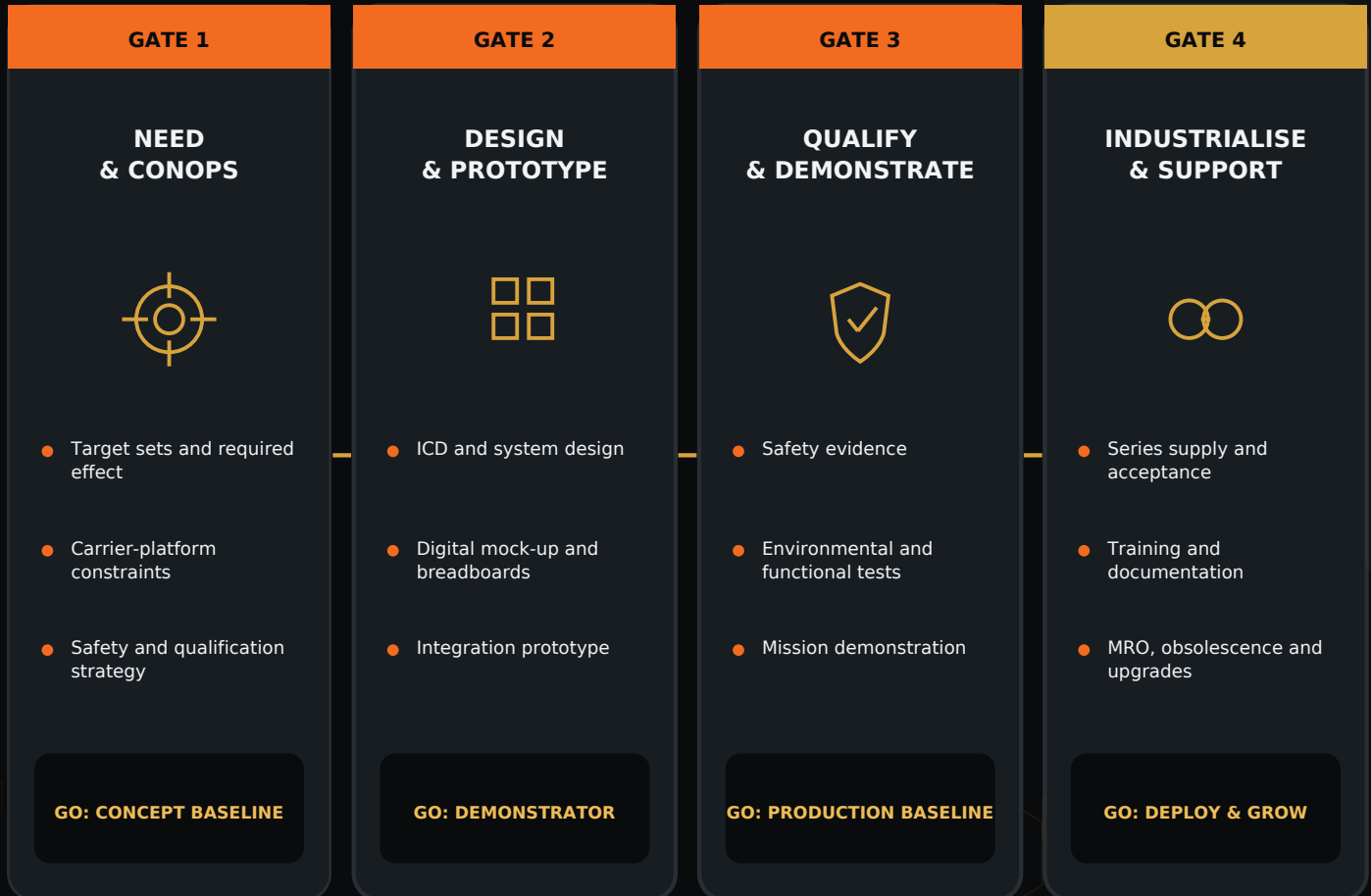
INTEGRATION DELIVERABLES

- Interface Control Document
- Safety architecture & hazards
- Ground / vehicle / flight / sea trials
- 3D envelope, weight and CoG
- Test and qualification matrix
- Product baseline & acceptance data

FROM OPERATIONAL NEED TO DEPLOYABLE CAPABILITY

A gated development path with rapid demonstration and controlled risk

The programme is organised around decision gates. Each phase delivers the evidence required for the next investment decision, from mission effect and platform fit to a qualified production



PROGRAMME ACCELERATORS

PROVEN MODULES

Start from existing effector, fuze and safety architectures.

PARALLEL WORKSTREAMS

Carrier interface, safety, supply chain and test preparation progress together.

SPIRAL DEVELOPMENT

The first deployable configuration becomes the baseline for further carriers and effects.

LIVE TEST AND VALIDATION

From controlled trials to evidence for qualification and deployment

Testing is integrated into the weaponization programme from the outset. Controlled live trials provide evidence for effector performance, system reliability, platform integration and the safety case.

LIVE TEST FIRING

Real-world demonstrations. Proven performance.
Mission-ready loitering munitions in action.



PRECISION ENGAGEMENT

Accurate target recognition and engagement.



OPERATOR CONTROLLED

Full mission control and real-time targeting.



PROVEN EFFECTIVENESS

Live test firings validate lethality and system reliability.



TEST EVIDENCE PACKAGE

FUNCTIONAL

Arming logic, trigger chain and intended effector function.

PERFORMANCE

Effect measurement against representative targets and conditions.

PLATFORM

Mechanical, electrical, data and separation performance.

SAFETY

Inhibits, safe states, environmental evidence and acceptance records.

NETHERLANDS-BASED INTEGRATION, INTERNATIONAL EXPERIENCE

A transparent governance model for engineering, supply and support

AIA PROGRAMME ROLE

- Netherlands-based programme and integration lead
- Carrier-platform interfaces and configuration control
- Supply-chain coordination, acceptance and quality assurance
- Demonstration, training and lifecycle support

TECHNOLOGY BASELINE

- Decades of hands-on professional experience
- Specialisation in warheads, explosive trains and fuzes
- Solutions already deployed by foreign Ministries of Defence
- Custom effector design and performance analysis

GOVERNANCE AND ASSURANCE

CONFIGURATION

Controlled product baselines, variant management and traceable changes.

SUPPLY CONTINUITY

Second-source strategy where available, stock policy and obsolescence management.

COMPLIANCE

Export control, end-use governance and security requirements embedded in the programme.

DUE DILIGENCE

Complete origin and supply-chain information through designated formal and secure channels.

POTENTIAL NETHERLANDS INDUSTRIAL PARTICIPATION

Local integration | Assembly & acceptance | Test and qualification partners | MRO & training

Workshare is defined per carrier, volume, regulatory framework and availability of technical data.



LET'S BUILD THE FUTURE OF TACTICAL PRECISION

AGENDA FOR AN INITIAL PROGRAMME SESSION

- Carrier platform and mission use cases
- Required effects and constraints
- Safety, interface and qualification approach
- Demonstrator, industrial model and roadmap



[AI-ARMAMENTS.COM](https://www.ai-armaments.com)

CONTACT

ADDRESS Technopol 4, 5026 SB Tilburg, Netherlands

E-MAIL info@ai-armaments.com

PHONE +31 (0) 85 23 813 00

WEB www.ai-armaments.com

COMPANY DETAILS

NCAGE H2R68

D-U-N-S 491664271

EORI NL855147118

KVK 63230402

Conceptual programme proposal. Specifications are subject to engineering, qualification, export control and contractual agreement.