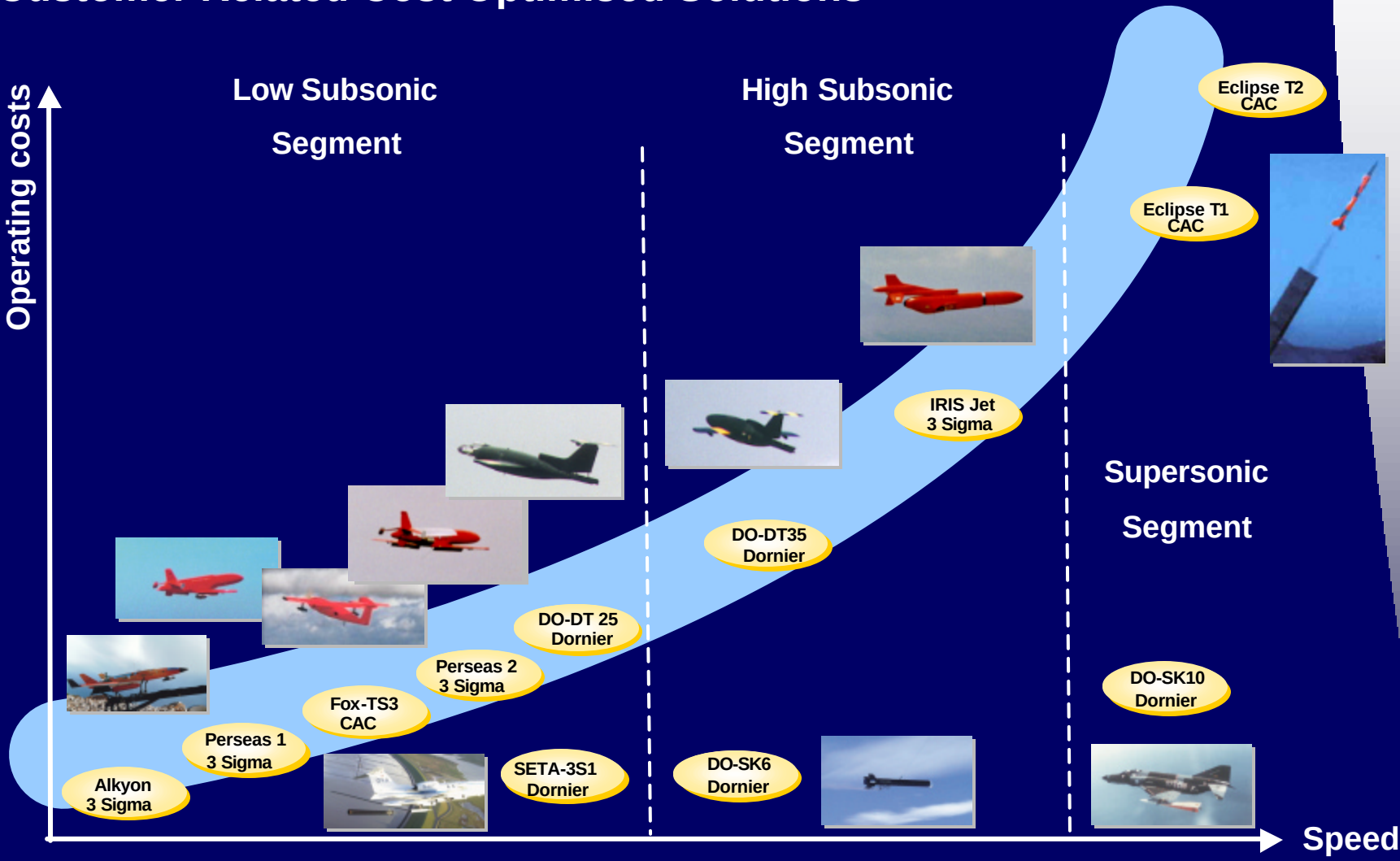
# Target Systems & Services

EADS

# Customer Related Cost Optimised Solutions



# New Jet-Powered Drone Target Family

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Airborne Systems

# New Jet-Powered Drone Target Family

## The to be Simulated Threat . . .

# . . . the Low Cost Target Approach . . .

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## . . . and the Low Cost/High Performance Solution

## Aerial Target Feasibility Study and Design Goals

- Highest degree of threat replications with optimised value for money solution (> 80 % of full sale target fidelity for < 10 % of the costs)
  - High performance airborne platform for a wide range of AD-Systems:
    - passive Infrared (VSHORAD)
    - CLOS / ACLOS (SHORAD)
    - passive Radar (MRAD)
    - active Radar (LRAD)

    with highest degree of fidelity in terms of
    - target detection
    - target acquisition / target evaluation
    - target tracking
    - target intercept

## Aerial Target Feasibility Study and Design Goals (continued)

- Direct kill target
  - Low cost with COTS products
- High speed and high evasive target
  - optimised airframe solution with jet propulsion
- Threat replication and “after action reporting” with sophisticated and common payload solutions
  - MDI, IRSS, RSS, IRCM, ECM, IFF
- System and operation commonality
  - generic ground equipment
  - modular mission planning modules

# Dornier Target Drone Family

- **DO-DT25 Basic Air Defence Training**
  - Long range target detection and acquisition (optimised visibility, improved IR-Signature, high RCS)
  - Long Endurance for multiple target acquisition and tracking training
  - High Payload Capacity
  - Wide speed range
  - Easy to use and to maintain

- **DO-DT35 Advanced Air Defence Training**
  - High Speed and altitude range
  - Low Cost (Direct kill target)
  - Complex target scenario (formation flight)
  - Easy to use and to operate (no RATO)

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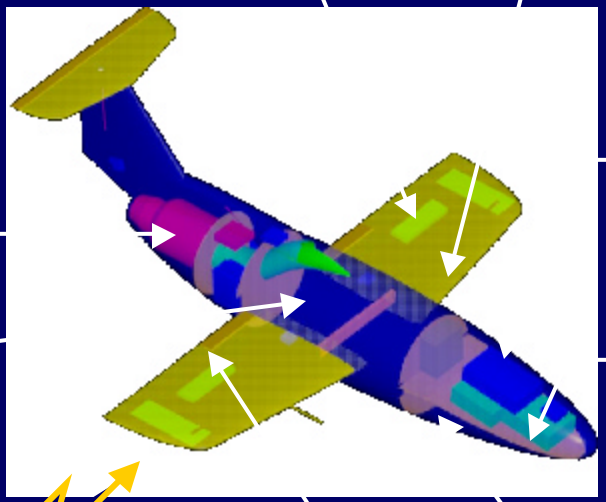
# DO-DT25 on Launcher at WTD 91 Meppen
with IR-Enhancement Kit

# DO-DT25/35 - Basic Product Description



Antennas

Telemetry (Basis SK6)

Autopilot

Jet Engine (s)

Fuel System

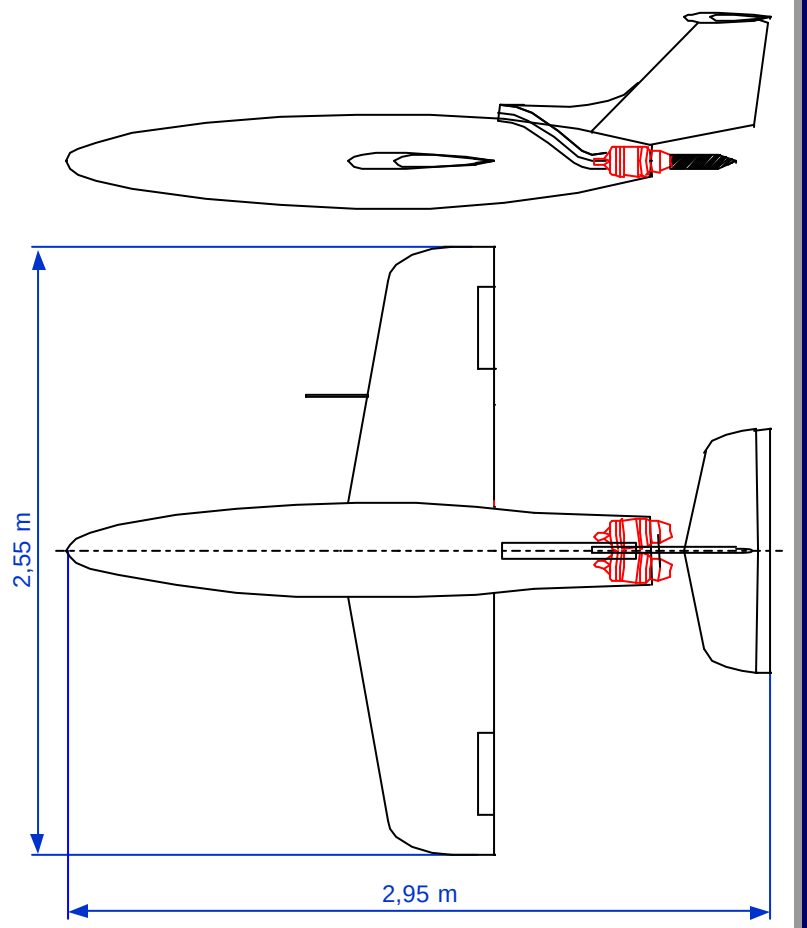
Miss Distance Indicator Seta 3

Parachute System

Radar Transponder

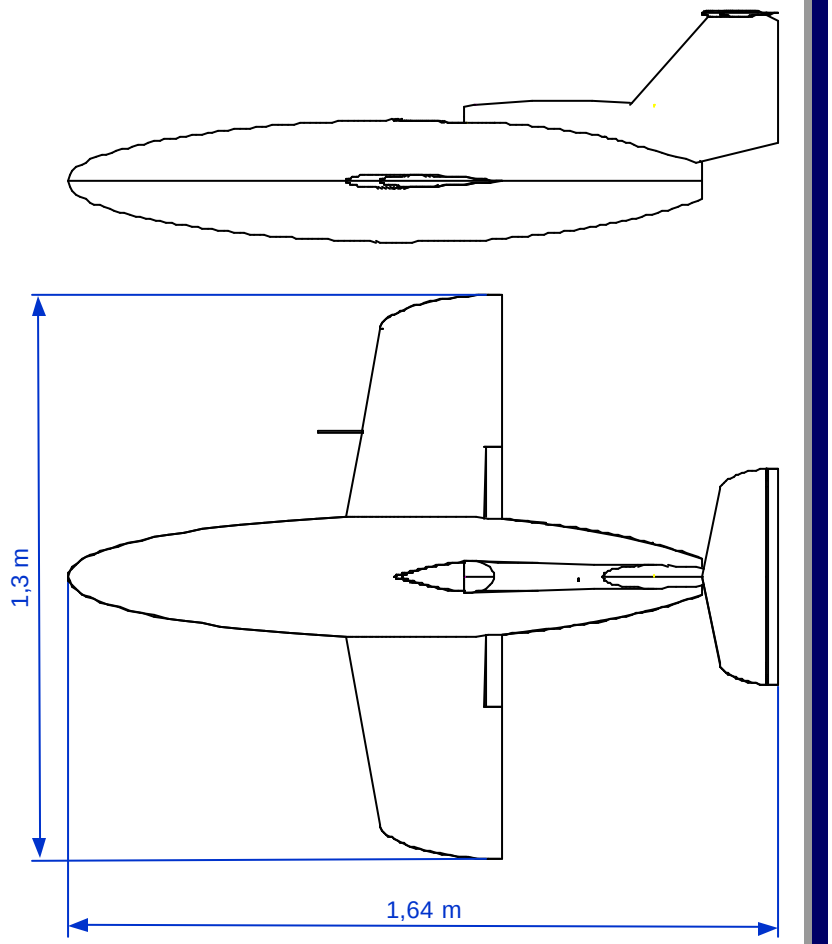
Ground Control Station

# DO-DT25 - Key Performance Data




| | | |
|---|---|---|
| **Dimensions** | | |
| Length | 2,95 | m |
| Wing span | 2,55 | m |
| **Weights** | | |
| Empty weight | 30 | kg |
| Payload | 15 | kg |
| Fuel | 40 | ltr. |
| Max. take-off weight | 85 | kg |
| **Engine** | | |
| Max. thrust | 320 | N |
| **Flight Guidance System** | | |
| Flight modes: PIC, RPV & UAV | | |
| Navigation | GPS | |
| Range telemetry | 100 | km |
| **Recovery System** | | |
| Parachute | | |
| Descent speed min. / max. | 3,5 / 5,0 | m/s |
| **Launching System** | | |
| Pneumatic Catapult | | |
| **Performance** | | |
| Max. speed @ SL, ISA | 450 | km/h |
| Vne | 500 | km/h |
| Max. climb rate | 31 | m/s |
| Typical mission endurance | 100 | min |
| Max. operating altitude | 7000 | m |
| **Payloads** | | |
| MDI, IRSS, RSS, IRCM, ECM, IFF, SMOKE | | |

# DO-DT35 - Key Performance Data




| | | |
|---|---|---|
| **Dimensions** | | |
| Length | 1,64 | m |
| Wing span | 1,30 | m |
| **Weights** | | |
| Empty weight | 15 | kg |
| Payload | max. 10 | kg |
| Fuel | 15 / 21 | kg/l |
| Max. take-off weight | 40 | kg |
| **Engine** | | |
| Max. thrust | 220 | N |
| **Flight Guidance System** | | |
| Flight modes: PIC, RPV & UAV | | |
| Navigation | GPS | |
| Range telemetry | 100 | km |
| **Recovery System** | | |
| 2 stage parachute system | | |
| Landing speed min. / max. | 3,5 / 5,0 | m/s |
| **Launching System** | | |
| Pneumatic Catapult | | |
| **Performance** | | |
| Max. speed @ SL, ISA | 650 | km/h |
| Vne | 700 | km/h |
| Max. climb rate | 31 | m/s |
| Max. endurance @ max. thrust | 30 | min |
| Typical mission endurance | 90 | min |
| Max. operating altitude | 7000 | m |
| **Payloads** | | |
| Radar Repeater, IR Augmenter, Smoke, MDI | | |

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# DO-DT35 on Launcher at WTD 91 Meppen
with IR-Enhancement Kit

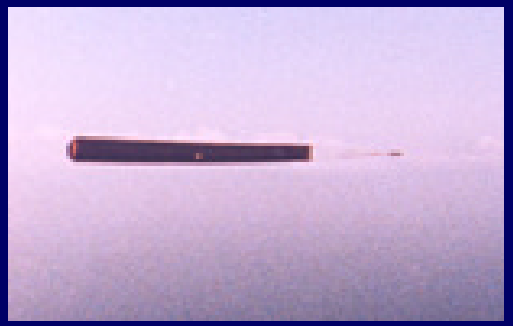
# SETA - Radar Miss Distance Indicator

SETA-3 2DT (Drone Target)

SETA-3 2ST (Sleeve Target)

SETA-3 24 HT (Hard Target)

Introduction to market: 1987
Qty. Produced: > 8000



# TRANSPONDER - IFF LRTP2

- Light Weight Low Cost Transponder
- Responds to interrogations Mode 1, 2, 3/A (STANAG4193, part 1)
- Built in provisions for upgrade to Mode 4 (external cryptographic unit to be provided)
- Mode C (external altitude encoder to be provided)

## Characteristics

- Interrogation Mode: Mode 1, 2, 3/A, 4
- Peak power: 24 dBW (min.); 26 dBW (max.)
- Reply Rate: 1200 replies per second (max.)
- Dimensions: L x B x H = (260 x 107 x 85.5) mm
- Mass: 1.8 kg

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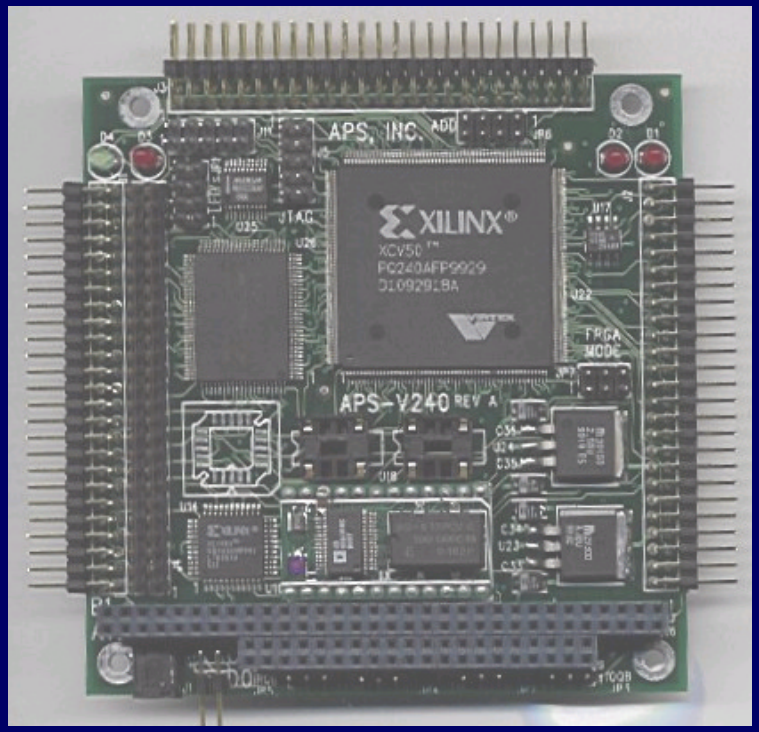
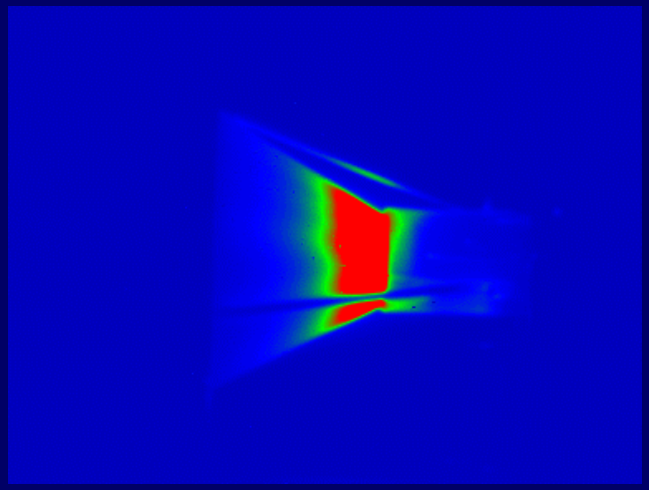
# RSS-SIMULATOR

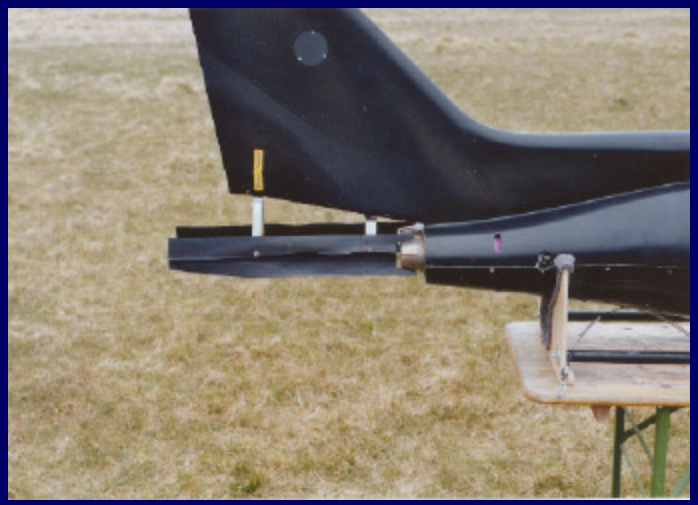
- Core of RSS-Simulator is Low-Cost DRFM
- Low Cost approach using COTS hardware (e.g. Free Programmable Gate Array - FPGA)
- Simulation of Range Doppler Profiles
- Scintillating realistic targets (not only “clean” echos)
- Specific jet-engine modulation (platform specific engine doppler profiles)
- Simulation of formation flights (drones behind each other)
- Optional airborne nose radar signature simulation

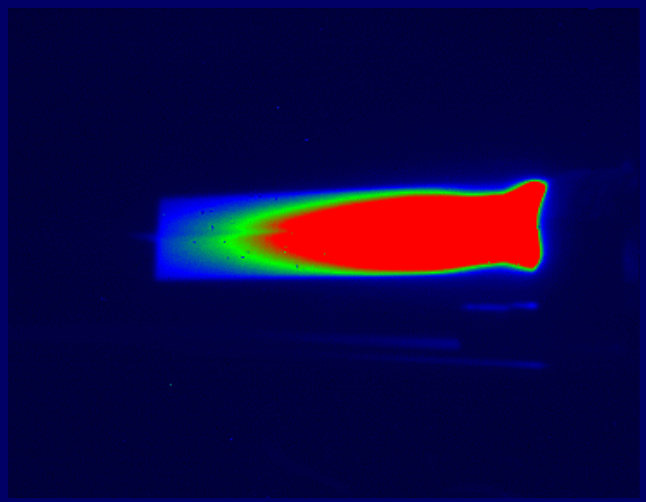



**DRFM**
(Digital Radio Frequency Modulation)

# IR Enhancement Kit







# New Jet-Powered Drone Target Family

## Demonstration Flight (Video)