

INVENTRA S³

SENSOR · SURVEILLANCE · SYSTEMS

End-to-End Reconnaissance and Surveillance Systems

Company Presentation 2026

2015

Founded

22

Models

5

Product families

Rev. R05 · September 2026



COMPANY

Inventra at a Glance

Inventra designs, manufactures, integrates and qualifies reconnaissance and surveillance systems in Türkiye.

2015

Year founded

22

Models in five product families

4 weeks

Typical delivery of a configured unit

2 years

Standard warranty



R&D Centre · Teknopark Ankara



Integration and Test Centre · Ostim OSB, Ankara

Engineering Capabilities

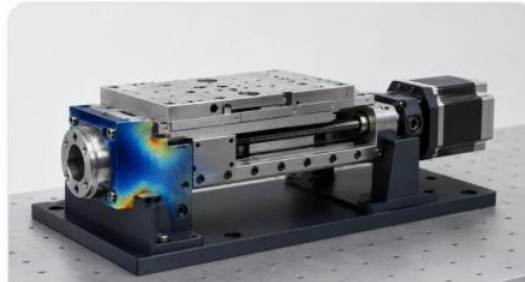
One team, from design to qualification: mechanism, drive electronics and code are designed together.



01

Electromechanical System Design

- Parametric modelling
- Static and dynamic design
- Motion transmission design
- Control and driver design



02

Analysis

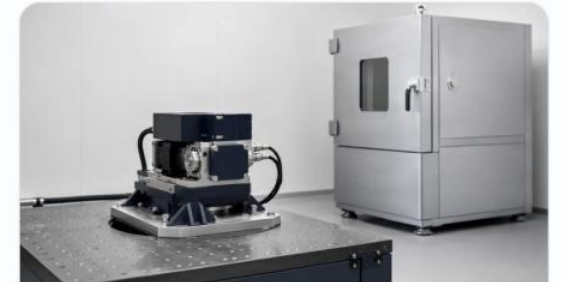
- Static, modal and harmonic
- Vibration, drop and shock
- Multi-body dynamics (MBD)
- Hardware-in-the-loop (HIL)



03

Manufacturing

- 5-axis simultaneous CNC milling
- C- and Y-axis CNC turning
- Coating and painting
- Cabling and integration



04

Test and Qualification

- Hot / cold and humidity chambers
- Inspection on a 5-axis CMM
- MIL-STD-810G and 461G
- External lab for the rest

Manufacturing and Test Infrastructure



Machining, surface finishing, cabling and integration happen in one building, which is what makes a four-week configured delivery possible.

- 01 5-axis CNC vertical machining centre**
Housings, gimbal yokes and mast sections
- 02 5-axis CNC turning centre**
C- and Y-axis turning of rotating parts
- 03 5-axis coordinate measuring machine**
Every machined part checked against its model
- 04 Hot / cold test chamber**
- 05 Humidity test chamber**
- 06 Coating, painting and cabling**
In the same building as assembly



Qualification Standards

Condition	MIL-STD-810G method and level
High temperature	Mtd. 501.5 · +60 °C operating, +70 °C storage
Low temperature	Mtd. 502.5 · -32 °C operating, -40 °C storage
Low pressure	Mtd. 500.5 · 10.500 ft operating, 37.000 ft storage
Humidity	Mtd. 507.5 Proc. II · 90 % RH at +60 °C, 10 × 24 h
Rain	Mtd. 506.5 Proc. I · 1,7 mm/min with 18 m/s wind
Salt fog	Mtd. 509.5 · 5 % NaCl, 2 × (24 h fog + 24 h drying)
Blowing dust and sand	Mtd. 510.5 · Proc. I dust, Proc. II sand
Vibration	Mtd. 514.6 Proc. I · Cat. 4, secured cargo
Shock	Mtd. 516.6 Proc. I · 20 g, 11 ms

One profile across the range. SEG10, SEG12 and SEG14 without humidity; SEB20 to 40 g shock; TML10, TMM10, TMH10, MMT10 and MMT20 to transit drop in their case (Mtd. 516.6 Proc. IV).

EMI / EMC

MIL-STD-461G

- CE102
- CS101
- CS114
- CS115
- CS116
- CS118
- RE102
- RS103

ELECTRICAL INTERFACE

MIL-DTL-38999

Connectors on every electronic unit, 18-32 VDC supply, RS-422 with optional Ethernet

STRUCTURE AND FINISH

Aluminum 6061-T6

Electrostatic powder coating, RAL 9005 matte black; ACP20 in RAL 7001 gray

Certifications

Certified management systems, and a defence industry competency rating from the Presidency of Defence Industries.

QUALITY ISO 9001 Quality management system Edition 2015 Certificate No. 102033456	ENVIRONMENT ISO 14001 Environmental management system Edition 2015 Certificate No. 102033457	INFORMATION SECURITY ISO 27001 Information security management system Edition 2022 Certificate No. 102033458	CUSTOMER SATISFACTION ISO 10002 Customer satisfaction management system Edition 2018 Certificate No. 102033459	DEFENCE INDUSTRY EYDEP ES 201-B competency level, Presidency of Defence Industries Valid until 1 May 2028 Certificate No. ES-2024-650
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2026	ASELSAN award, SAHA 2026. Highest-value exporting company category, "1000 Products Localisation Journey" programme
2024	ASELSAN localisation appreciation certificate, presented at SAHA EXPO 2024
2019	ASELSAN approved sub-industry company certificate

[TÜRK PATENT]
İNCELEMELİ PATENT
No: 79 1013 12010 0
Kırsal Hayat
Kırsal Hayatın ve orman ürünlerinin kullanımı
Fayda Sahibi
YUSUF DEMİRCİLERE
FARUK AYDINLAR
AYRIST BODUR

14. Ocak 2013 tarihinde yapılan inceleme sonucunda, başvuru hakkındaki buluşun, Türkiye Cumhuriyeti Patent Kanunu'nun 11. maddesinde belirtilen buluşun niteliklerini taşıdığı ve 11. maddenin 2. fıkrasında belirtilen buluşun niteliklerini taşıdığı değerlendirilmiştir. Başvuru hakkındaki buluşun, Türkiye Cumhuriyeti Patent Kanunu'nun 11. maddesinde belirtilen buluşun niteliklerini taşıdığı değerlendirilmiştir. Başvuru hakkındaki buluşun, Türkiye Cumhuriyeti Patent Kanunu'nun 11. maddesinde belirtilen buluşun niteliklerini taşıdığı değerlendirilmiştir.

Mustafa Arslan
Türk Patent İnceleme Dairesi

Examined patent, granted 2019. Y. Dabakoğlu, F. Aydoğan, A. Bodur

TR 2017 17205 A1
On/off apparatus for thermal-magnetic circuit breakers
 Patent application, 2017. Applicant Enerjisa; co-invented by
 Y. Dabakoğlu

Hybrid screw-shaft drive (MES20), hybrid actuator (MMS20), tripod and cam lock (MMT10), zero-clearance tripod (TML10)

PRODUCTS

Product Families

Four core families mount to one another; the fifth integrates them in the field.

ONE RECONNAISSANCE AND SURVEILLANCE SYSTEM



01 Electro-Optical Systems

4 models
Stabilized EO/IR
gimbals and
targeting sight



02 Positioners

6 models
Zero-backlash pan-
tilts, rotator and
goniometer



03 Mast Systems

8 models
Motorized and manual
masts up to 15 m



04 Tripods

3 models
Zero-clearance
tripods from 25
to 150 kg

+



05 Supporting Equipment

1 model
Climatic rack cabins
for the system
electronics

Electro-Optical Systems

Positioners

Mast Systems

Tripods

+

Supporting Equipment

ONE SYSTEM

Electro-Optical Systems

Day, thermal, laser range finding and designation channels in stabilized gimbals and a targeting sight.

32 km

Laser range
finder reach

50×

Day camera
optical zoom

20 mK

NETD of the cooled
MWIR channel



SEG10

Dual channel gimbal
EO-LWIR



SEG12

Triple channel compact gimbal
EO-LWIR-LRF



SEG14

Long range triple channel gimbal
EO-LWIR-LRF



SEB20

Quad channel targeting sight
EO-MWIR-LRF-LD

Electro-Optical Systems — Key Specifications

	SEG10	SEG12	SEG14	SEB20
Channels	EO · LWIR	EO · LWIR · LRF	EO · LWIR · LRF	EO · MWIR · LRF · LD
Thermal detector	LWIR 640 × 512 px, 50 mK	LWIR 640 × 512 px, 50 mK	LWIR 1.280 × 1.024 px, 30 mK	Cooled MWIR 1.280 × 1.024 px, 20 mK
Thermal optics	25 mm	25 mm	28-90 mm, 3,2× zoom	37,5-750 mm, 20× zoom
Day camera	1.920 × 1.080 px, 30×	1.920 × 1.080 px, 30×	1.920 × 1.080 px, 30×	1.920 × 1.080 px, 50×
Laser range finder	—	5-5.000 m	5-32.000 m	5-32.000 m
Laser designator	—	—	—	50 mJ, 1.064 nm, STANAG 3733
Stabilization	Two-axis IMU + encoder	Two-axis IMU + encoder	Two-axis IMU + encoder	Fibre gyro + encoder
Weight	4,4 kg	4,6 kg	8,0 kg	18,4 kg

Common to all four: HD-SDI and Ethernet video, 25 Hz tracker, RS-422 (Ethernet optional), 18-32 VDC, MIL-DTL-38999, 150 W max.

Electro-Optical Systems

Positioners

Mast Systems

Tripods

+

Supporting Equipment

ONE SYSTEM

Positioners

Zero-backlash pan-tilts and a rotator with brushless servo drives and 22-bit encoders, plus a digital goniometer and a manual head.

0,002°

Axis resolution

1.032 Nm

Highest nominal torque, PES10

180 °/s

Highest pan-tilt speed, PED10 and PED12



PED08

Compact pan-tilt



PED10

Ultra precision pan-tilt



PED12

Stabilized pan-tilt



PES10

Ultra precision rotator



PEG03

Lightweight goniometer



PMD01

Lightweight manual pan-tilt

Positioners — Key Specifications

	PED08	PED10	PED12	PES10	PEG03	PMD01
Type	Pan-tilt	Pan-tilt	Stabilized pan-tilt	Rotator	Goniometer	Manual pan-tilt
Nominal torque	30-135 Nm	60-275 Nm	60-275 Nm	185-1.032 Nm	—	—
Speed	6-48 °/s	28-180 °/s	28-180 °/s	4,5-25 °/s	—	—
Axis resolution	0,002°	0,002°	0,002°	0,002°	0,0056°	0,0056°
Accuracy	0,04°	0,04°	0,04°	0,04°	0,056°	—
Rated payload	—	—	—	—	12 kg	10 kg
Slipping	60 lines	60 lines	60 lines	24 lines	—	—
Weight	9,0 kg	16,1 kg	16,1 kg	9,5 kg	2,9 kg	1,4 kg

Torque and speed span the catalogued drive units of each model. PED and PES units: zero-backlash gearing, brushless drives, 22-bit optical encoders. Electronic units: 18-32 VDC, RS-422 with optional Ethernet, MIL-DTL-38999.

Electro-Optical Systems

Positioners

Mast Systems

Tripods

+

Supporting Equipment

ONE SYSTEM

Mast Systems

Motorized and manual telescopic masts for vehicles, shelters and the field, from a 4 kg UGV mast to portable masts reaching 15 m.

15 m

Highest catalogued
extended height

192 kg

Highest rated
payload, MES10

120 km/h

Wind load rating of
every mast



MES01

Ultra compact
Motorized



MES10

Locked
Motorized



MES20

Modular
Motorized



MEM10

Ultra stable
Motorized



MMS20

Modular
Manual



MMT10

Ultra portable
Manual



MMT20

Heavy duty
Manual



MMW10

Winch-type
Manual

Mast Systems — Key Specifications

Model	Actuation	Drive type	Extended height	Rated payload	Catalogued builds
MES01 Ultra compact	Motorized	Threaded rod	1.160-1.500 mm	5-10 kg	2
MES10 Locked	Motorized	Flange-locked telescopic	3.005-10.005 mm	45-192 kg	65
MES20 Modular	Motorized	Hybrid screw shaft	2.500-14.000 mm	41-78 kg	4
MEM10 Ultra stable	Motorized	Telescopic screw shaft	2.200-7.200 mm	100-125 kg	4
MMS20 Modular	Manual	Trapezoidal screw + steel wire	2.500-14.000 mm	21-58 kg	4
MMT10 Ultra portable	Manual	Push or cable driven	2.395-15.065 mm	11-53 kg	15 + custom
MMT20 Heavy duty	Manual	Push or cable driven	2.720-15.440 mm	35-95 kg	13 + custom
MMW10 Winch-type	Manual	Winch arm, locking	2.500 mm	50 kg	1

Ranges span catalogued builds; payload falls as height rises. All masts rated for 120 km/h wind; motorized masts to MIL-STD-1275.

Tripods

Zero-clearance aluminum tripods: preloaded joints leave no play, so the line of sight holds.

150 kg

Rated payload, TMH10

1,95 kg

Lightest build, TML10

140 mm

Lowest working height, TML10



TML10 Ultra Lightweight Tripod

Rated payload **25-35 kg**

Weight **1,95-2,50 kg**

Extended height **975-1.450 mm**



TMM10 Medium Duty Tripod

Rated payload **40-60 kg**

Weight **4,3-5,2 kg**

Extended height **864-1.266 mm**



TMH10 Heavy Duty Tripod

Rated payload **150 kg**

Weight **14,7-18,4 kg**

Extended height **995-1.250 mm**

Electro-Optical Systems

Positioners

Mast Systems

Tripods

+

Supporting Equipment

ONE SYSTEM

Supporting Equipment

ACP20 portable climatic rack cabins house, cool and shield the system electronics in the field.

1.500 W

Cooling capacity

30

Catalogued builds

10U

Standard cabin height

Cooling	1.500 W, vapour compression
Heating	750 W or 1.500 W, option
EMI / EMC	Faraday-cage shielding
Cabin height	8U, 10U, 12U, 15U, 18U
Chassis depth	610, 740, 870 mm
Wheels	Dolly or fixed wheels
Mains	220 VAC, 50 Hz
Colour	RAL 7001 gray
Environment	MIL-STD-810G



Applications

Bold blue: recommended starting point

Application	Electro-Optical Systems	Positioners	Mast Systems	Tripods	Supporting Equipment
 Border and perimeter surveillance	SEG14 SEB20 SEG10 SEG12	PED08 PED10 PED12	MEM10 MES10 MES20 MMS20 MMT10 MMT20 MMW10	TMH10 TMM10	ACP20
 Armoured vehicle thermal imagers	SEB20 SEG14	PED10 PED12	MES10 MEM10	—	—
 Unmanned ground vehicles	SEG14 SEG10 SEG12	—	MES01 MES10	—	—
 Target acquisition and designation	SEB20 SEG14	PEG03 PED10 PMD01	—	TMH10 TML10	—
 Radar and antenna positioning	—	PED10 PED08 PES10	MEM10 MES10 MES20 MMS20 MMW10	TMH10 TMM10	—
 Tactical communications masts	—	PMD01	MMT20 MES10 MES20 MMS20 MMT10 MMW10	—	ACP20

IN THE FIELD · DEPLOYED

Deployed Platforms



SEG10 on MES01 · UGV with
ASELSAN AVAZ



SEG10 on MES01 · HAVELSAN
BARKAN UGV



SEG14 on raised mast · HAVELSAN BARKAN



MES10 · BMC armoured 4x4



MMS20 with radar head · TURAN pickup



Two MMT10 masts · KANGAL
and BUKALEMUN

Shown at IDEF 2023, SAHA EXPO 2024 and SAHA 2026

IN THE FIELD · CONFIGURED TO ORDER

Every Part Number Is a Build

One code from each build step, then any options: the part number states the complete configuration.

FAMILY

MES10

Locked
electromechanical
mast

BUILD STEPS

-1700

Retracted height
1.700 mm

-5005

Extended height
5.005 mm

-0061

Rated payload
61 kg

OPTIONS

-LPEK

Lightning
protection and
earthing kit

-IHIF

Instant height
information

-LGES

Labels in
Spanish

245

Catalogued builds, before options

49

Finish and colour codes

4 weeks

Typical delivery of a configured unit

INVENTRA S³

22 MODELS · 5 FAMILIES · ONE SYSTEM

Tell us the platform and the constraint.

Our engineering team answers with a configuration that fits it, usually within two working days.

R&D CENTRE

Melih Gökçek Bulvarı, Teknopark No: 61/19, İvedik OSB
06378 Yenimahalle, Ankara, Türkiye

INTEGRATION AND TEST CENTRE

Ahi Evran Cad. No: 134, Ostim OSB
06374 Yenimahalle, Ankara, Türkiye

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03 In the Field



SEG10



SEG12



SEG14



SEB20



PED08



PED10



PED12



PES10



PEG03



PMD01



MES01



MES10



MES20



MEM10



MMS20



MMT10



MMT20



MMW10



TML10



TMM10



TMH10



ACP20

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