## Flight Simulation

**Simulators Delivered in Twelve Countries**

### Fixed Wing

- **Global Training Aviation (GTA)**
  - A320 FFS LEVEL D JAA
  - A320 FTD LEVEL D JAA
- **Indra Company**
  - A220 LEVEL D JAA
- **Indra Company (Indra)**
  - A320 FFS LEVEL D JAA
- **Indra Company (Indra)**
  - A320 FTD LEVEL D JAA
- **Indra Company (Indra)**
  - A350 LEVEL D JAA
- **Indra Company (Indra)**
  - A350 FTD LEVEL D JAA

### Rotary Wing

- **Eurocopter UK**
  - EC225 FFS LEVEL B JAR
- **Eurocopter Germany**
  - EC135 FTD 3 and FNPT III MCC JAR
- **American Eurocopter**
  - EC135 FTD 4 FAA
- **American Eurocopter**
  - EC145 FTD 4 FAA
- **American Eurocopter**
  - AS350 FFS LEVEL B FAA

### Navy

- **US Navy**
  - P-8A Poseidon Trainer
  - NH-90 TTH Trainer
  - NH-90 TTH Level C
  - NH-90 TTH Level D
  - NH-90 TTH Level E
  - NH-90 TTH Level F
  - NH-90 TTH Level G
  - NH-90 TTH Level H
  - NH-90 TTH Level I
  - NH-90 TTH Level J

### Army

- **Spanish Army**
  - CH-47D Chinook FMS and FTD
  - AS532 Cougar FMS and FNPT III MCC
  - Tiger 2 FMS
- **Spanish Air Force**
  - S-76 Flight Trainer Device
  - S-76B Flight Simulator

### Other

- **US Navy**
  - MH-53 Simulator Upgrade
  - H-60 Seahawk (2 FTDs)
  - AV-8B+ RNAWST 2F150A Upgrades
  - AV-8B+ RNAWST 2F150C Upgrades
  - AV-8B+ Aircrew Trainers Rehost
  - F-14 FMS Rehost and Upgrade
  - AV-8B+ RNAWST 2F150A Upgrade
- **Italian Navy**
  - AV-8B+ Radar Intercept Trainer
  - AV-8B+ Italian Mission Simulator (IMS)
- **Spanish Army, Navy and Air Force**
  - C-101 Operational Flight Trainer (OFT)
  - C-130 Tactical Trainer
  - C-130 Operational Flight Trainers
  - CASA 212 Full Mission Simulator
  - T-346 Flight Simulation
  - EAV-8B Full Mission Simulator

### Additional References

- **Global Training Aviation (GTA)**
  - A320 FFS 2018 Upgrade
  - A320 FTD 2018 Upgrade
  - A350 FTD 2018 Upgrade
- **Indra Company**
  - A320 FFS 2018 Upgrade
  - A350 FTD 2018 Upgrade

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**Indra Company**

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**FLIGHT SIMULATION**

**State of the-art and innovation systems**

**Introduction**

Indra has been providing for over 30 years its simulators to armed forces and commercial airlines around the world using information technologies to contribute to mission readiness. Through training Deviation and simulation systems, Indra is able to meet the demands of all customers in terms of operational and cost effectiveness.

Flight simulation activity began in 1980 for the C-130J, and since then, Indra has been selected as a prime contractor for several projects in different platforms for armed forces in the world, covering a wide range of flight simulators, training devices and training requirements analysis programs.

**Global maintenance and support long term commitment**

Indra’s Advanced System Solutions (ASS) is dedicated to strengthen support activity, delivering right from the programs conception design stage Reliability and maintainability engineering applied during the design and development phase, including quality, reliability and equipment maintenance. The capability enables exercises to be carried out in specific geographical areas and with distinct mission objectives.

**Full range of devices**

Simplicity, training and conquest based interactive trainers are devices which allow the user to become familiar with specific aircraft. The training system is considerably reduced in size and cost and becomes remote systems available. This type of devices is designed for use in a total training program, where instruction is in a flight simulator.

Operational flight trainers and flight

training devices simulate the correct operation of the platform throughout all mission phases. They are designed to simulate emergency procedures. Some also include scenario variability, or the threat of an arms system simulation.

Full flight and full mission simulations are the most complete devices, simulating not only the performance and operation of the platform, but also the complete tactical environment, including weapons, threats and electronic warfare elements. This capability enables exercises to be carried out in specific geographical areas and with distinct mission objectives.

**Operational flight training and flight

training devices simulate the correct operation of the platform throughout all mission phases. They are designed to simulate emergency procedures. Some also include scenario variability, or the threat of an arms system simulation.

Indra’s flight simulators are the most demanding customers.

NLR

Indra’s in-company generated system, the perfect WIP/2 comparison that allows the modification and creation of visual databases to be easily implemented in the simulation.

**EUVIS**

Modular and expandable solution that covers all the demanding and analysis requirements for simulation centers.

** indie’s high performance synthetic environment product, scenario planning (SIP) long, tactical environment tactical control center, interface with simulation and training (TSC).**

**EVOLUTION**

3D tool for mission planning stations, and debriefing and analysis stations for real and simulated tactical scenarios.

**EXANA**

Affordable modular high and helicopter simulation. From T7 or T37 2-Pilot or even single pilot 70% of the keys and procedures are compatible for flight hours in this device.

**Modular and expandable solution that covers all the demanding and analysis requirements for simulation centers**
**FLIGHT SIMULATION**

**Introduction**

Indra has been proving for over 20 years its simulators to armed forces and commercial airlines around the world using information technologies to contribute to mission readiness. Throughout training, ranging from the beginning of the trainee’s career to the most demanding necessities, Indra’s visual database generation system, Indra’s visual image generation system, Indra’s tools suite for interoperability, and Indra’s high performance synthetic environment product, constitute the perfect INVIS2 companion that allows the user to become familiar with specific systems and functions of the aircraft, with a considerably reduced acquisition cost and consequently higher availability. This type of device is designed for use in a total training programme or basic introduction in a flight simulator.

State-of-the-art and innovative systems

- **EON-A** Modular and expandable solution that covers all the challenging and rigorous analysis necessities for simulation centers.
- **RIGE** Indra’s high performance synthetic environment product. Schemes planning (SIP), tactical environment, tactical control computer, interface with simulation platforms and monitoring (Simev).
- **IVA** Indra tools suite for Irrepressibility (26.4.111).
- **OCTAN-3D** 3D tools for mission planning stations, and instructor operators.

**Full range of devices**

- Simulation trainers and component based interactive trainers are devices which allow the user to become familiar with specific platforms, representing a considerable reduction in acquisition cost and consequently higher availability. This type of device is designed for use in a total training programme or basic introduction in a flight simulator.
- Operational flight trainers and flight training devices simulate the correct operation of the platform throughout all phases of flight, covering both normal and emergency procedures. Some also include scenario realism, or the full range of aircraft systems simulations.
- Full flight and full mission simulators are the most complete devices, simulating not only the performance and operation of the platform, but also the complete tactical environment, including weapons, threats and enemy forces, weather conditions. This capability enables exercises to be carried out in specific geographical areas and with distinct mission objectives.

**Operational flight trainers and flight training devices simulate the correct operation of the platform throughout all phases of flight, covering both normal and emergency procedures. Some also include scenario realism, or the full range of aircraft systems simulation.**

**Global maintenance and support long term commitment**

- Technical publications, spares and support engineering are just some of the services that our ILS activity provides for the simulators service life.
- Remote support system software and support engineering are provided remotely over the internet.
- Indra’s solutions are ISO 9001:2000 and OHSAS 18001 certified with significant savings and convenience in maintenance and procurement of end users.
- Worldwide coverage is call support and spares somewhere near you.
- The very best simulation manufactured by Indra in 1980s is still in operation today.

**Leading some of the most demanding international projects in simulation**

**SECURITY AND AVIATION**

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FLIGHT SIMULATION

Introduction

Indra has been providing for over 20 years its simulators to armed forces and commercial airlines around the world using information technologies to contribute to mission readiness through training.

Indra simulators meet the highest standards, fixed based flight training devices and training requirements of our customers in terms of performance, reliability and maintainability and have produced high-quality simulators for military and civilian use.

State-of-the-art and innovation systems

Indra's flight simulation products offer modular, expandable solutions that comply with the demanding and rigorous analysis necessary for simulation centers.

INDRA Modular and expandable solution that covers the training and mission analysis necessities for simulation centers.

- INSE High performance synthetic environment product. Scenario planning (x-PL), tactical environment and tactical control center, with simulation and monitoring (Sim4TS).
- INEXEXA INSEXEXA 3D tool for mission planning stations. Stations, and debriefing and analysis stations for real and simulated tactical scenarios.
- EVOLUTION Modular and expandable high-end helicopter simulators. Every helicopter simulator can be expanded with additional modules, like different helicopters, to meet all the needs of the customer.
- AIDA Modular and expandable solution that covers the training and mission analysis necessities for simulation centers.

Global maintenance and support long term commitment

Indra's dedicated ILS (Integrated Logistic Support) activity provides the perfect INVIS2 companion that allows our customers to become familiar with specific systems and functions of the aircraft in a considerably reduced acquisition cost and a considerably reduced period of time.

INSE In a total simulation system, the control room is designed for use in a total training program with an instructor in a flight simulator.

INEXEXA INSEXEXA AIDA INSEXEXA 3D tool for mission planning stations, instructor-teacher, instructor and analyst and analysis station for real and simulated tactical scenarios.

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## Flight Simulation

### Fixed-Wing

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  - ATR-72 FFS LEVEL D JAA
  - A320 FFS LEVEL D JAA

- **Indra**
  - EC225 FFS LEVEL B JAR
  - EC135 FTD 3 and FNPT III MCC JAR
  - EC145 FTD 4 FAA
  - AS350 FFS LEVEL B FAA

- **Spanish Army**
  - CH-47 Chinook FMS and FTD
  - AS532 Cougar FMS and FNPT III MCC
  - Tiger 2 FMS

- **Spanish Air Force**
  - S-76 Flight trainer device

- **Spanish Navy**
  - SH-60B LAMPS MkIII full mission simulator
  - MH-53 Simulator upgrade
  - H-60 Seahawk (2 FTDs)

- **US Navy**
  - F-5 Simulator
  - Mirage F-1 Simulator
  - EAV-8B Full mission simulator

- **Jordanian Air Force**
  - C-101 Operational Flight Trainer (OFT)

- **Royal Air Force**
  - F-18 OFTT Visual upgrade

- **Cl-415 FTD
  - Eurofighter GmbH
  - Eurofighter Typhoon AST A

- **Falkland Islands**
  - F-16 Full mission simulator

### Rotary-Wing

- **Global Training Aviation (GTA)**
  - A330 FFS LEVEL D JAA

- **Indra**
  - EC135 FTD 6 FAA
  - EC135 FTD 4 FAA
  - EC145 FTD 2 FAA

- **Spanish Army**
  - F-50 level C FFS

- **Fokker**
  - Fokker 100 CPT

- **Venezuelan National Guard**
  - King Air B200 FTD

- **Chilean Air Force**
  - A-35-c101 simulator

- **Portuguese Air Force**
  - A-22 Full mission simulator

### Main References

- **Global Training Aviation (GTA)**
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