The RES® simulates up to 2048 independent SSR or Mode S targets, ADS-B, FRUIT, reflectors and antenna behavior on RF level. All the signals that would occur in real life situations are injected into the radar, hereby replying correctly to the radar's interrogations as real transponders would do. A known reference scenario is presented to the radar and compared to the radar output testing the full data link capabilities and system performance limits.

## CAPABILITIES

- Simulation up to 2048 targets in Mode S, Mode 1, 2, 3/A, C, NSM, Mode 5, Mode 5 Level 2 and 2B, ADS-B and TIS-B.

- Quickly create complex scenarios and injection of predefined scenarios

- Test a radar's most challenging performance specifications: load capacity, sensitivity, Mode S performance, Mode 1 and 2 performance, resolution behavior, accuracy, probability of reply, performance when using low PRF, high rotation speed, jammer frequencies, etc

- PSR with RTG/SSR/ADS-B full system evaluation

- Scalable and customisable static and moving platform with motion compensation, standard antenna systems, EASA antenna systems remote control and standalone maintenance

## BENEFITS

- EUROCONTROL EMS compliant
  STANAG and AIMS Mode 5 capabilities

- RES® speeds up factory acceptance testing through generating simulated scenarios which are impossible to achieve with common signal generators.
  Repeatability of tests is a valuable time- and cost-saving advantage of RES®.

- RES® avoids dependency of opportunity traffic and test flights, as such increasing reliability and reducing cost and environmental impact.

- RES® has an intuitive user interface but has many expert features. Therefore, it comes with profound user training, documentation and, obviously, with maintenance and calibration services.
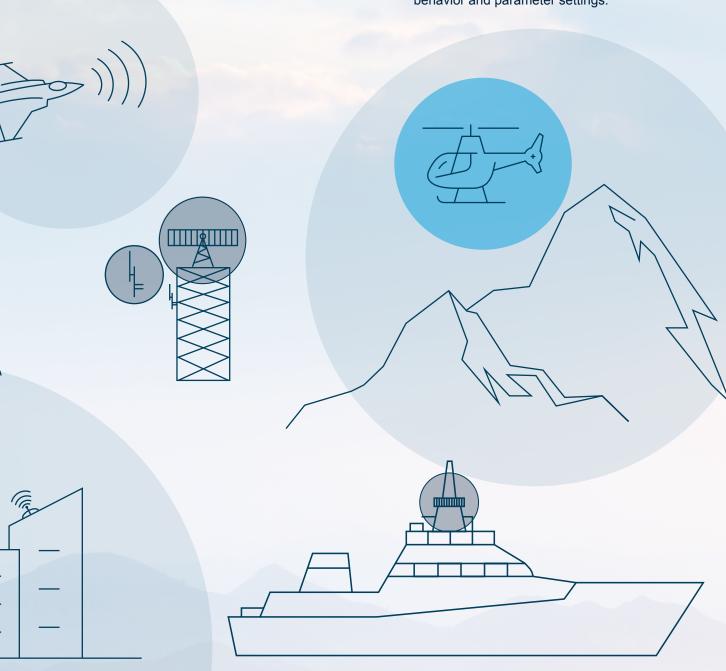
## USE CASES

### System developers

Full test capabilities for the industry requirements for Secondary Surveillance Radar.

### System acceptance engineers

RES® provides the ultimate test instrument to perform factory acceptance of SSR or Mode S radars. The RES® software enables the user to create scenarios very quickly by using implemented models allowing to test a radar's most challenging performance specifications. RES® allows BOX-level testing and performance evaluations.

### Maintenance engineers

Secondary radars are incredibly complex, requiring a vast number of parameters to be tested. When radar settings or environment are modified, or if a radar's firmware is upgraded by the manufacturer, maintenance personnel require a method to determine the new performance of the radar and compare it to the "previous" condition. The RES® is perfectly suited for this type of regression testing. Several predefined scenarios can be injected in the radar before and after modifications, allowing performance to be compared. The same principle can be used to compare radar channels for similar behavior and parameter settings.

Simulate different — targets / environments / platforms

## FEATURES

Compared to the previous flagship the RES® has enclosed the following updates and improvements

Real-Time Target Movement Interpretation
Enables live processing for dynamic and precise tracking capabilities.

Seamless Backward Compatibility
Ensures integration with existing legacy systems without additional modifications.

Unified Graphical User Interface (GUI)
Combines functionality into a single, comprehensive interface.

Support for Point-and-Shoot Antennas
Optimized for intuitive operation and enhanced targeting precision.

360° Channel Coverage with ADS-B Integration
Delivers comprehensive situational awareness across all channels.

Enhanced Built-In Test Equipment (BITE) and Diagnostics
Reduces troubleshooting time with advanced fault-detection tools.

Device Synchronization
Fully compatible with other Intersoft Electronics equipment.

Support for Absolute Azimuth Encoders
Provides superior precision for azimuth data handling.

Optimized Radar OBA Tuning
Simplifies Sum - Difference adjustments through intuitive IQ phase shifting.

Expanded Receiver Capabilities
Includes calibration features for Interrogator receivers.

Standardized Remote Control Protocols
Incorporates official RPC techniques for streamlined remote operations.

Omni-Channel Generation
Ensures robust performance across diverse operational scenarios.

Full integrated FRUIT generation
IN and OUT-beam FRUIT in the same box.

Remote operation
RES Calibration Kit Available with remote calibration capabilities
Remote Software Update Capability

Designed to perform reliably 24/7 under demanding conditions