

SUPPLEMENTAL TYPE CERTIFICATE (STC) PROCESS AT HONEYWELL AEROSPACE

Enabling Safe, Scalable and Global Aircraft Modifications

EXECUTIVE SUMMARY

Aircraft operators across commercial, business and defense sectors are under constant pressure to modernize fleets—improving safety, connectivity, efficiency and regulatory compliance—while minimizing downtime and certification risk. Supplemental Type Certificates (STCs) provide the approved pathway to introduce these upgrades without altering the aircraft’s original Type Certificate.

Honeywell Aerospace offers operators a proven, OEM-led STC approach that simplifies certification, accelerates entry into service and enables global operability. By acting as the STC holder and managing the end-to-end certification lifecycle, Honeywell reduces complexity for operators and delivers certified solutions that are scalable, reliable and supported over the long term.

This whitepaper explains Honeywell’s STC approach, its importance to operators, and how working with Honeywell can minimize risk and speed up modernization outcomes.

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Aircraft modifications are essential to keeping fleets operationally competitive and compliant with evolving airspace and safety requirements. However, these modifications must be certified to ensure they do not degrade the aircraft's airworthiness.

The Supplemental Type Certificate (STC) is the formal approval issued by civil aviation authorities such as the Federal Aviation Administration (FAA) or the European Union Aviation Safety Agency (EASA) for major changes to an approved aircraft design. Honeywell Aerospace is one of the world's leading STC holders, with hundreds of approved modifications across business aviation, commercial transport and special mission aircraft.

For aircraft operators, implementing major modifications is rarely just a technical challenge—it is a business and operational risk.

Common challenges include:

- i. Uncertainty exists regarding certification timelines and regulatory outcomes.
- ii. There is limited internal expertise in certification and compliance processes.
- iii. Approvals are fragmented across agencies such as FAA, EASA and others.
- iv. Modification programs result in increased aircraft downtime.
- v. Concerns remain about long-term support following STC approval.

When STC programs are not managed effectively, operators may experience delayed entry into service, escalating costs or operational limitations. Operators increasingly seek partners who can assume certification responsibility and provide predictable, regulator-approved outcomes.

WHAT IS A SUPPLEMENTAL TYPE CERTIFICATE (STC)?

A Supplemental Type Certificate is an approval issued by a civil aviation authority to modify an aeronautical product beyond its original approved configuration. An STC references the original Type Certificate and approves only the specific change being introduced.

STCs are governed under regulations such as FAA 14 CFR Part 21 Subpart E and EASA Part 21 Subpart J.

REGULATORY FRAMEWORK

The FAA and EASA define the certification basis, compliance methods and approval steps for STCs. Key elements include:

- i. Defined certification basis (e.g., Part 23, 25, 27, or 29).
- ii. Compliance demonstration under system early validation, planning, analysis, installation design, aircraft testing and certification package submission.
- iii. Development of Instructions for Continued Airworthiness (ICA).
- iv. Aircraft Flight Manual Supplements (AFMS).

Once approved, STCs may be validated by other authorities (e.g., CAAC, ANAC, DGCA India) through bilateral aviation safety agreements.

THE HONEYWELL AEROSPACE STC APPROACH (THE SOLUTION)

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OPERATOR-FOCUSED, OEM-LED CERTIFICATION MODEL

Honeywell Aerospace adopts an OEM-led STC model (Figure 1), serving as both the applicant and long-term holder for its aftermarket solutions. This strategy significantly reduces certification risk, internal workload and uncertainties around ongoing support. Honeywell delivers an integrated one-stop solution that includes more than 500 STCs, providing RMU products, STCs and kits to aircraft operators, maintenance centres and leasing companies—all underpinned by advanced digital tools.

Unlike third-party or fragmented STC efforts, Honeywell’s approach ensures:

- i. Single-point accountability for certification and compliance.
- ii. Direct alignment with original equipment design intent.
- iii. Strong regulatory credibility with FAA, EASA and validating authorities.
- iv. Long-term product and certification support across the aircraft lifecycle.

This model is particularly valuable for operators managing multi-aircraft or multi-region fleets.

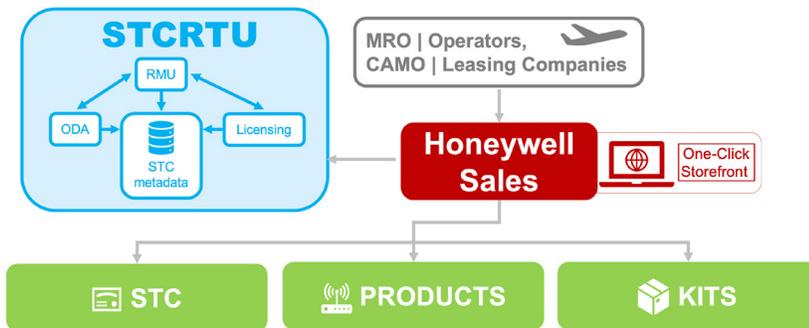


Figure 1: Honeywell Operator-Focused, OEM-Led STC Model

SIMPLIFIED HONEYWELL STC PROCESS – WHAT OPERATORS EXPERIENCE

From an operator perspective, Honeywell's STC process is designed to be predictable and transparent:

- i. Early System Validation for Applicability and Scoping: Aircraft models, configurations and operational needs are assessed early to define STC applicability and certification scope.
- ii. Certification Planning: Honeywell Aerospace establishes the certification basis and coordinates directly with the FAA (and EASA where applicable), reducing operator involvement in regulatory negotiations.
- iii. Design, Analysis and Testing: Compliance is demonstrated through approved engineering analyses, laboratory testing, ground tests and flight tests as required.
- iv. Approved Data Package Delivery: Customers receive a complete, regulator-approved data set including installation instructions, AFMS and Instructions for Continued Airworthiness (ICA).
- v. Global Validation Support: Honeywell supports validation with international authorities (e.g., EASA, DGCA, CAAC) to enable unrestricted global operations.

POST-CERTIFICATION AND CONTINUED AIRWORTHINESS

Honeywell remains engaged well beyond STC approval, supporting operators through:

- i. Continued operational safety monitoring.
- ii. Service bulletins and product updates.
- iii. Regulatory coordination for changes or enhancements.

This lifecycle support differentiates OEM-held STCs from limited-scope third-party certifications.

Honeywell's STC catalogue demonstrates how an OEM-led certification approach translates into real-world operational and safety benefits for aircraft operators.

RDR-7000 ADVANCED WEATHER RADAR STCS

Honeywell's RDR-7000 Advanced Weather Radar has been certified through multiple STCs across commercial transport and business aviation platforms. These STCs enable operators to replace legacy radar systems with advanced turbulence detection, predictive windshear awareness and enhanced situational awareness—without changes to the original aircraft type design.

Certification activities typically include antenna compatibility analysis, structural substantiation, EMI/EMC testing, human factors evaluations and flight test validation. The STCs align with FAA, EASA, and ICAO weather awareness objectives.

Benefits to the Operator:

- i. The IntuVue RDR-7000 operates automatically, eliminating the need for manual pilot adjustments and allowing pilots to focus on safe and efficient flight.
- ii. Customers can enable advanced software features remotely for clearer weather views on familiar routes.
- iii. The system reduces operational costs by minimizing delays, downtime, diversions and turnbacks caused by weather events like hailstorms and windshear.

EGPWS MARK V-A STCS

Honeywell's EGPWS Mark V-A has been approved via STCs on a wide range of commercial and business aircraft. These STCs support compliance with Terrain Awareness and Warning System (TAWS) mandates while significantly enhancing situational awareness during approach, departure and low-altitude operations.

Certification focuses on software assurance, terrain and obstacle database integrity, alerting logic validation, and cockpit human-machine interface assessments.

Benefits to the Operator:

- i. Advanced algorithms and displays improve altitude accuracy, address barometric altimetry challenges in cold conditions, and provide real-time updates on altitude and terrain.
- ii. Radar autotilt[®], automatic radar/terrain switching, and wind shear alerts enhance pilot awareness and reduce workload during critical flight phases.
- iii. Safety functions such as RFCF and envelope modulation help avoid unsafe landings and reduce false alarms, ensuring dependable terrain and runway data at all altitudes.

The Supplemental Type Certificate process is a critical enabler of aircraft modernization. Honeywell Aerospace's structured, OEM-led STC approach provides a reliable pathway for introducing complex systems while minimizing certification risk.

Through early regulator engagement, rigorous compliance discipline, and global validation readiness, Honeywell enables operators to modernize fleets safely and efficiently.

Aircraft operators considering avionics, connectivity, or system upgrades are encouraged to engage early with experienced STC holders to reduce certification risk and accelerate fleet modernization.

Honeywell Aerospace invites OEMs, operators, Maintenance, Repair and Overhaul Organisations and channel partners to discuss STC applicability, certification timelines and global validation strategies.

To connect with Honeywell Aerospace regarding Supplemental Type Certificates and certified aircraft modifications:

Email: stcrtu@honeywell.com

Fill Online STC RTU Order Form (Figure 2):

<https://aerospace.honeywell.com/us/en/secure/contact-us/forms/stc-rtu-form>

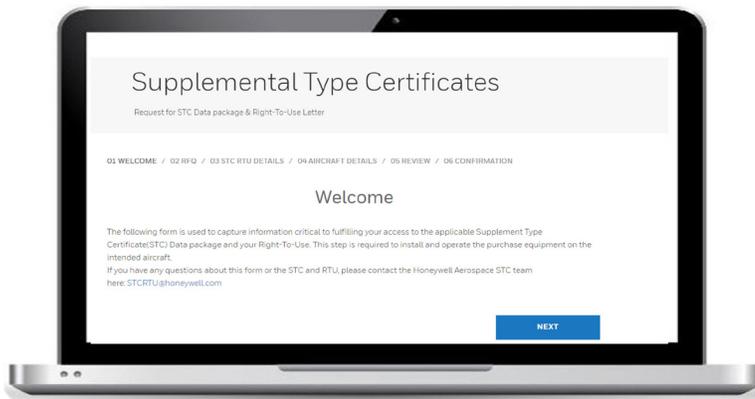


Figure 2: Online STC RTU Order Form

Early collaboration enables clearer certification pathways, predictable schedules and faster entry into service.

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Honeywell Aerospace Technologies

1944 East Sky Harbor Circle
Phoenix, AZ 85034

aerospace.honeywell.com

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