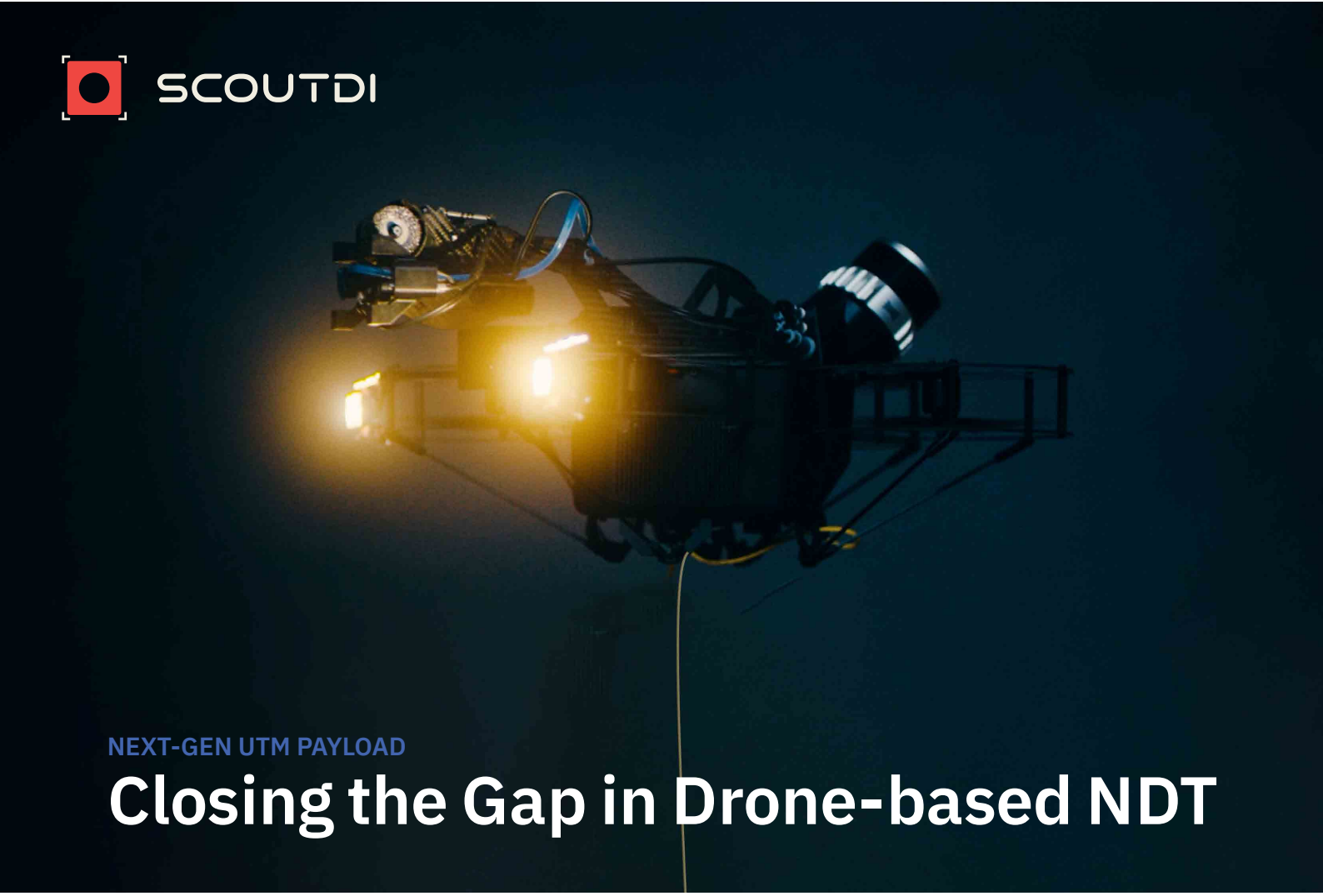


NEXT-GEN UTM PAYLOAD

Closing the Gap in Drone-based NDT

Next-Gen UTM Payload integrated on the Scout 137 Drone System. Spot cleaning and UT measurement in one operation.

One-Go UTM

Dock once. Clean. Couple. Measure. The Next-Gen UTM Payload completes the full UTM job in a single magnetic docking. No return trips. No second-guessing where the brush left off.

The drone approaches the asset and locks on magnetically. In the Scout Operator app, the pilot articulates the payload to the correct angle, activates the spot prep tool, feeds couplant gel as the probe is pivoted into position, and the probe captures UT readings continuously during the contact phase. A one-click Smart Release detaches the drone safely when the job is done. The payload ships with a selection of brushes and abrasive sleeves matched to common surface conditions, from light cleaning to heavy oxide and coatings.

In the Scout Companion app, the live A-scan runs continuously at 30 Hz. Every pulser parameter (gain, amplification, gates) is adjustable in real time while the payload stays on the wall. Calibration runs from the same app (see page 3).

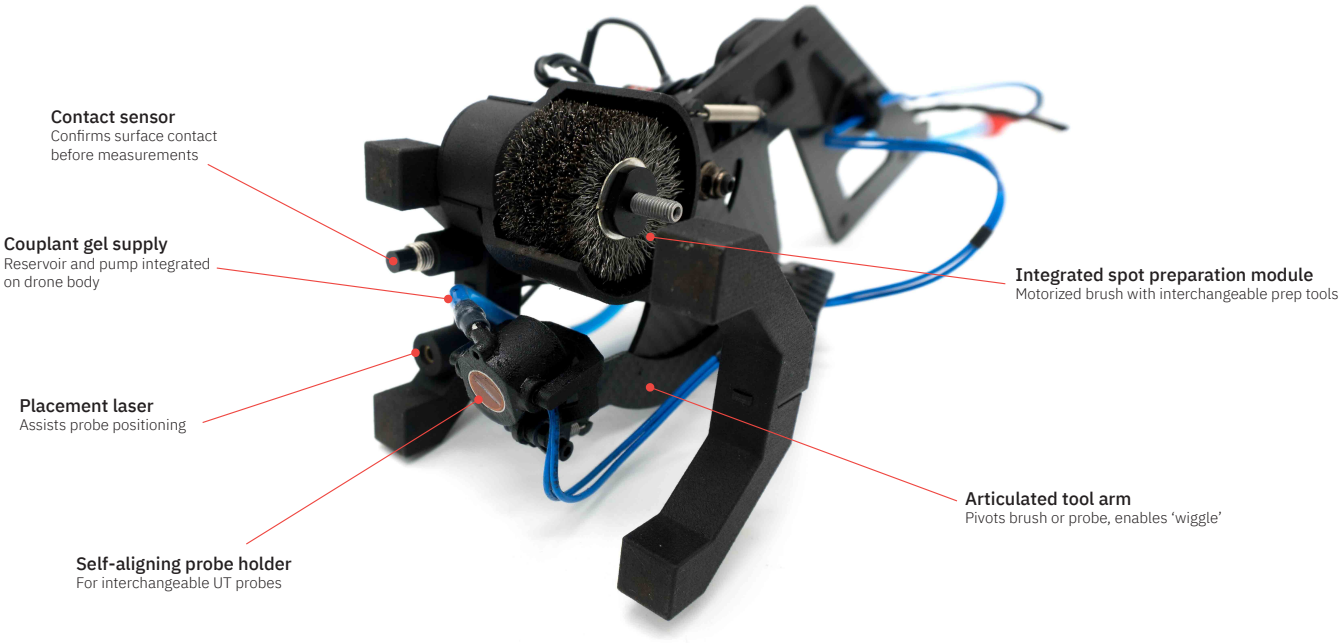
Need to fine-tune the spot? A patch of heavy rust, a cavity, an inclusion you'd rather avoid? The integrated wiggle function shifts the probe by up to 5 mm up or down, without releasing the magnets. No re-attaching, no re-cleaning, no losing the location.

The payload samples full A-scans 30 times per second, so every instant of the contact phase is covered. The full sample stream is logged for review in the Scout Portal, where you can assess everything, identify obvious outliers and pick the most representative reading afterwards. With full traceability.
The result is drone-borne UTM that behaves like deliberate, handheld point-sampling. The drone gives you the reach. The workflow gives you the articulated control of an inspector's hand.



The onboard 33 ml couplant reservoir holds enough gel for 50 to 100 dockings, depending on surface conditions.

HARDWARE OVERVIEW



Integrated workflow

With this integrated design, you avoid switching tools mid-job. No returning the drone to swap tools, no carrying spare payloads to the same spot twice. You get more measurements per session and broader coverage for every job.

It also makes drone-based NDT viable for a wider range of assignments, with higher completion percentages per inspection: the kind of jobs where a partial scope used to be the only realistic outcome. Because every reading is logged for review in the Scout Portal, the inspector leaves the site with a complete record rather than a best-effort sketch.

Unlimited flight time

UTM work, by its nature, takes time. With anti-collision sensors switched off for surface contact, you want to focus on careful, safe manoeuvring, not on racing a battery clock. Because the Scout 137 is tethered, power is always available and there is no need for battery changes. You can keep working until the couplant gel reservoir needs refilling, focusing on quality and safety.

Underway Evaluation

Tethered operation also turns each flight into a live verification session. The 4K preview, the live A-scan in Scout Companion, and continuous flight-path rendering all serve the same idea: confirm data quality and coverage while you are still on site. Spot a weak signal, a missed area, or a measurement worth re-taking before you leave. Decide with confidence when the asset can be closed and returned to production, without the costly second mobilisation when something turns up missing back at the office.

When sampling patterns matter, the freedom shows! Dense surveys can be laid out in quadrants or grid patterns, minimising unnecessary transport and keeping the visual organisation of sample points clear. Strategic single-point checks can focus on positioning accuracy and the safest path. Either way, the workday is shaped by what the inspection needs, not by what the inspection tool allows.

A closer look at a safe distance

The integrated 3.5x optical zoom lets the pilot study surface condition and structural details from a safer stand-off distance before committing to a docking attempt.
High-resolution 4K stills can be reviewed in detail to assess corrosion, coatings, surface roughness, and measurement strategy while the drone holds position.

Integrated Thornetix Talisman dual-crystal UT module

The UTM Payload integrates the Thornetix Talisman high-speed multi-channel embedded ultrasound module, with three dual-crystal probes included:

- 2.25 MHz: thick, coarse materials, rougher surface conditions
- 5 MHz: general / multi-application
- 7.5 MHz : thin materials and near-surface measurements

In addition to the three included probes, an optional pack of three single-crystal probes is available, and high-temperature designs are also supported. Contact us for more options.

THORNETIX
SMART THINKING



Three Thornetix dual-crystal probes are included with the UTM Payload. Additional probe types are available for specialised applications.

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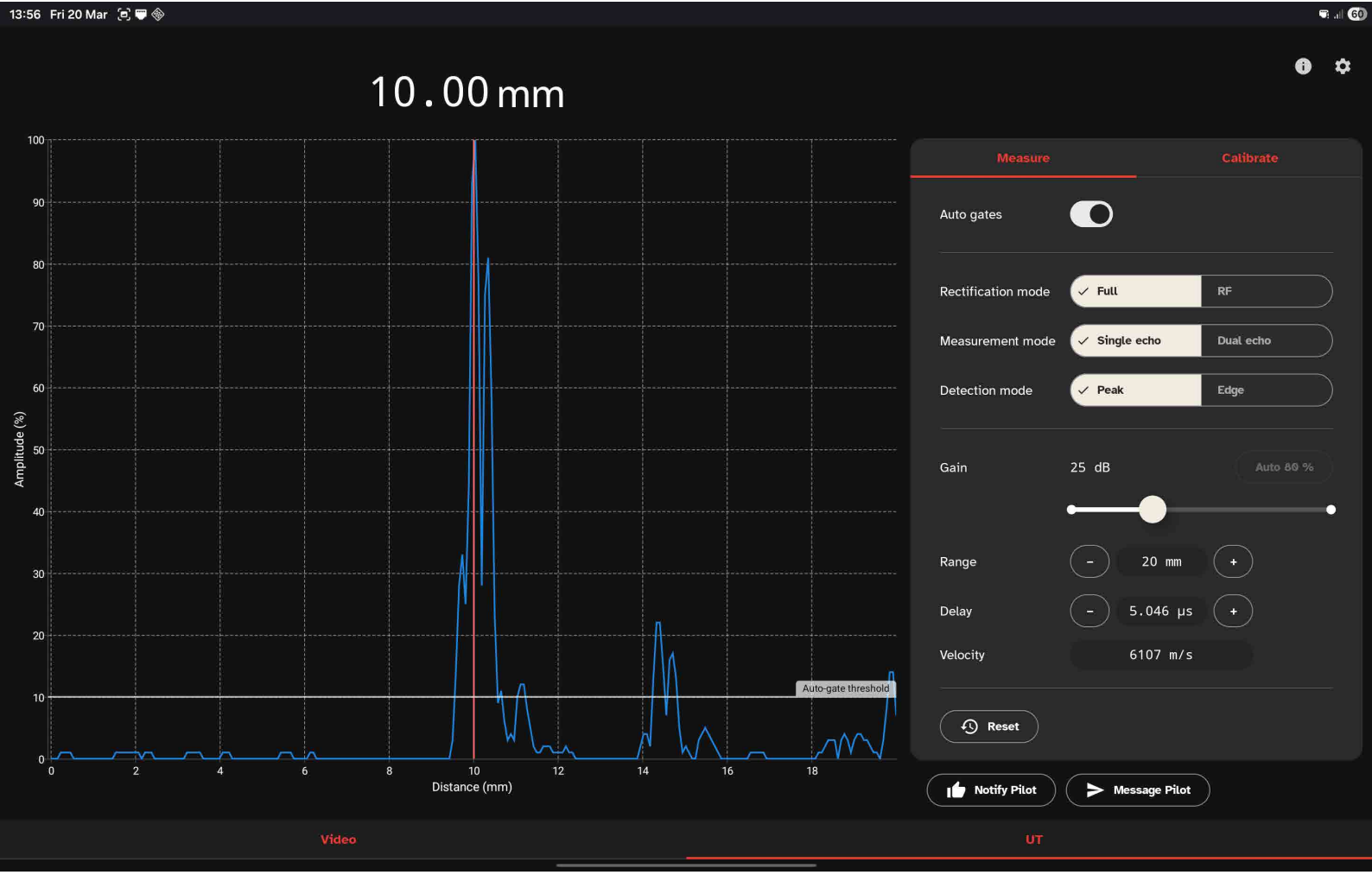


Complete UT pulser control live during flight in the Scout Companion app. Probe head angle, couplant dispenser, spot preparation and probe wiggle is done via the Scout Operator app.

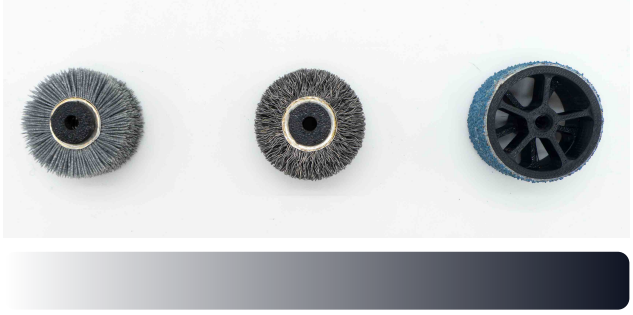
Scout Companion: live UT control

The Scout Companion app gives the NDT technician direct, real-time control of the Talisman pulser. All UT parameters (amplification, gates) are adjustable while the drone stays docked on the wall, and the live A-Scan shows the effect of every change immediately. No need to land the drone to tweak a setting.

Calibration runs from the same app, on the ground. It uses two reference thicknesses, one thin and one thick, held against the probe in sequence. A small metal reference piece is all you need to recalibrate on site, between assets, without a trip back to the lab.

Spot preparation tools included

The goal of spot preparation is simple: get a clean acoustic contact between the UT probe and the metal. The enemy is air, which hides among rust products, oxide layers, coatings, paint, dust, residues from whatever the asset has held, or hot scalings burnt onto boiler and heater walls. The Next-Gen UTM Payload ships with three tool groups of increasing abrasive effect, with multiple individual heads in each so you can fine-tune the match to the surface. Start with the gentlest option that gets you a usable A-scan and step up only when needed. The abrasive sleeves will take material from the substrate itself if used past real need, so do not reach for them by reflex.



Light abrasive effect *Medium abrasive effect* *High abrasive effect*

ScoutBrush SiC
silicon-carbide bristles

ScoutBrush Metal:
metal-wire bristles

ScoutSleeve Abrasive:
bonded abrasive sleeves

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Closing the Gap

The Next-Gen UTM Payload closes the gap in drone-based NDT by combining spot cleaning, couplant feed, and ultrasonic measurement in one integrated tool. Designed with direct input from field inspectors, it delivers more coverage per job, greater safety, and higher-quality data, all without the stress of battery limits.

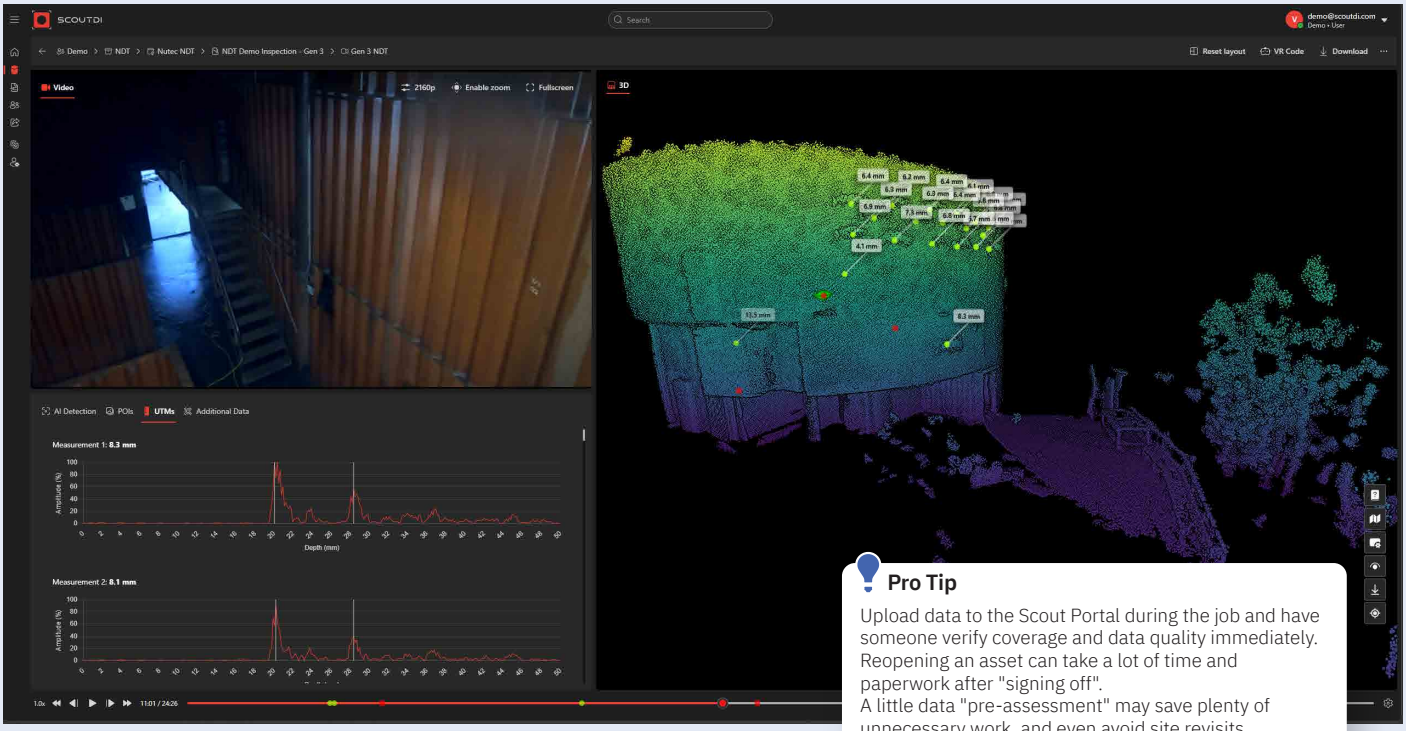
Two purpose-built apps put the inspector in control: Scout Operator for flight and payload articulation, Scout Companion for live UT measurement. The integrated wiggle function and continuous 30 Hz sampling turn every measurement into a deliberate, traceable record. Funnelling all your inspection data into the Scout Portal, you gain visualisation, analysis, and collaboration to maximise its value.

Each Next-Gen UTM Payload is factory tested and calibrated to ISO 16831 / EN 15317 standards for compliance and traceability, with field-simplified calibration tools for ease of use. ScoutDI is ISO 9001 and ISO 27001 certified, and the Scout 137 drone and Ground Station are CE-marked products.

Sounds interesting?
Contact us for more information!

Scout Portal: Your data turned into insights

The Scout Portal, our cloud-based inspection data management solution, transforms raw inspection data into actionable insights, whether you're streaming live or reviewing an inspection afterwards. Track flight paths and analyse your data with all visual POIs and UT measurements in an interactive 3D point cloud visualisation, and easily share and collaborate to maximise the value of your data acquisition efforts.



Reviewing an inspection in the Scout Portal with 4K video stream, interactive 3D point cloud, POIs and UT measurements at your fingertips

Pro Tip

Upload data to the Scout Portal during the job and have someone verify coverage and data quality immediately. Reopening an asset can take a lot of time and paperwork after "signing off".
A little data "pre-assessment" may save plenty of unnecessary work, and even avoid site revisits.

Contact us

Don't hesitate to contact us to discuss your use case. Reach out to ScoutDI headquarters directly or scan the QR code to **find your nearest distributor.**

ScoutDI AS
Sluppenvegen 25
7037 Trondheim, NORWAY

Tel (+47) 73 60 49 90
sales@scoutdi.com
www.scoutdi.com

SCOUTDI