

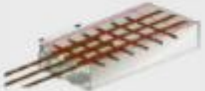
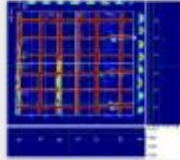


SCANNING SOLUTIONS

Inside Insight !

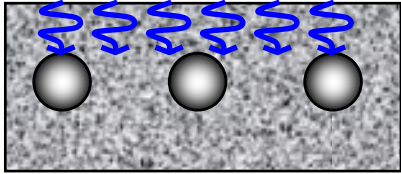


SCANNING APPLICATIONS CAN BE MAJORLY SPLIT INTO SAFE DRILLING AND ANALYSIS

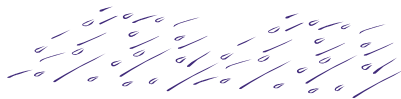
Scanning Applications		
Hit prevention	Localization	★ Analysis
  Safe drilling / coring / sawing	★  Rebar extension, Localization of existing rebars	  Rebar verification - layout, spacing, diameter, layer , curvature, depth, density
  Anchor setting	 Following pipe & cable runs	 Concrete coverage: corrosion & fire protection
★  Safe drilling in all base material	 Localizing studs for fixing	  Documentation, report & archive
PS 1000		PS 300

WHY DEPTH / CONCRETE COVER IS CRITICAL AND MUST BE VERIFIED

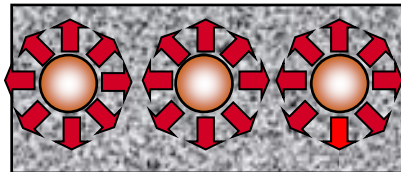
Preventing steel failures and thus collapses of the structure



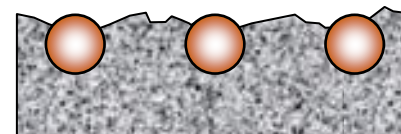
Workloads provoke small cracks in concrete surfaces. With insufficient concrete cover, cracks go down to rebar.



Humidity out of ambient air intrudes into structural member.



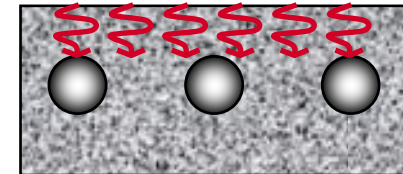
Rebar corrodes, expands and loses tensile strength.



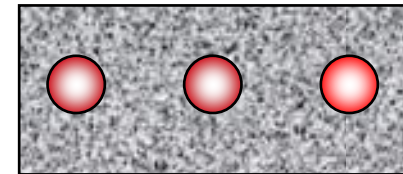
Concrete surface may blow off.



Concrete surface exposed to fire over longer period



Heat penetrates concrete



Rebar heats up and loses strength (has lost most of its strength by about 500°C)



Structure collapses

REBAR LAYOUT - KNOWING THE POSITION OF REBAR ALLOWS DRILLING TO BE FASTER AND MORE SECURE



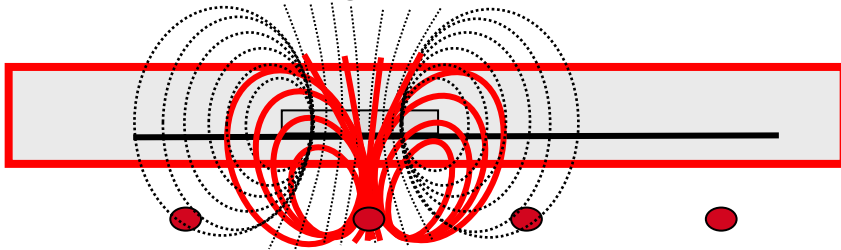
- Prevent cutting of statically relevant reinforcement
- Reduce wear on drill and core bits
- Reduce wear and tear on motors
- Reduce time spent drilling in serial fastening applications
- And above protects the structure from unnecessary puncturing and damage

HILTI DETECTION PRINCIPLES AND THEIR ADVANTAGES

Induction

Magnetic field principle

- detecting ferrous objects
- measuring coverage
- estimating diameter

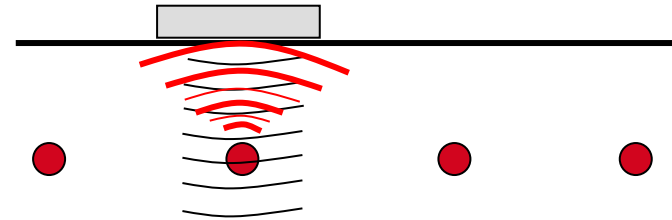


- + good accuracy for coverage measurement and bar sizing
- + not influenced by water
- limited depth of penetration
- only metal objects

Reflection

Radar waves

- detecting metals
- detecting non-metals
- detecting cavities, nests

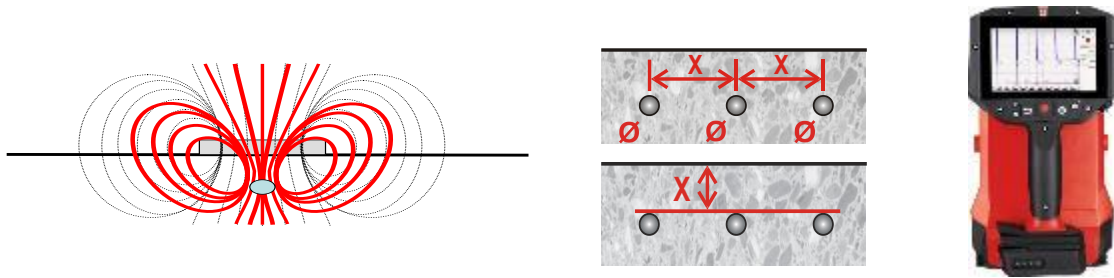


- + layout for virtually everything
- + depth penetration
- results greatly affected by base material, spacing of rebar layer
- limited results in moist conditions
- Handheld but Expensive equipment
- Limitation in measurement and depth reading

OUR SCANNING PORTFOLIO – DIFFERENT TOOLS FOR YOUR DIFFERENT JOBSITE NEEDS

Magnetic induction Technology

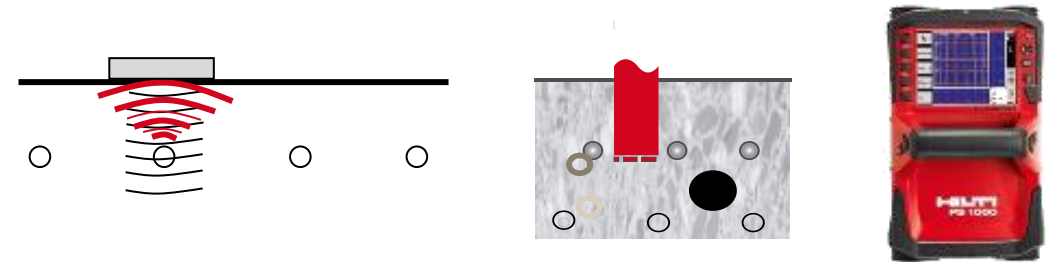
For rebar locations and reinforcement assessment



- If you require onsite safe drilling markings and quick onsite structural analysis - PS 300 is your tool
- Immediate on screen Rebar layout, Rebar Spacing, Concrete Cover
- Collects and exhibits Data from the 1st Layer of rebar, depth range up to 200mm, Detects only Ferrous Material
- Tentative Diameter estimation possible on screen, for more accurate analysis and submission use Hilti Profis Detection software

Pulse Radar Technology

For Safe Drilling / Coring tasks & structural analysis



- If you require Ferrous & Non-Ferrous material details for onsite safe drilling markings and quick onsite structural analysis - PS 1000 is your tool
- High detection depth up to 300 mm
- Multiple layer detection possible
- Imaging of rebars, PT cables, plastic pipes and non-metallic objects possible
- Estimated on screen Indication of object depth

FERRO SCANNER PS 300



PS 300 : COMPLETE REBAR LAYOUT AT YOUR FINGERTIPS

200 mm
Scanning
Depth

Detects
Ferrous
Materials

Supports
IS 1786

Rebar
Standard



5" touch
display with
intuitive
interface

B12/2.6 li-ion
battery
Compatible to
Hilti B12
platform

Works on Electro Magnetic Induction Principle

1

Easy to use – **DIY**

- One person operation without cables limits
- Superior visualization with data in one page, super easy to interpret

2

Accurate & reliable

Reliable cover reading and localization even in complex situations such as:

- unprecise rebar diameter input
- longitudinal rebars
- uneven rebar spacing

3

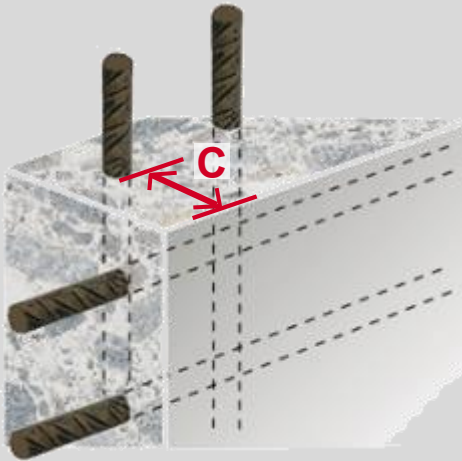
Fast & Productive

- 15cm scan area with 5 data points (2 times faster than competition in Quick scan)
- Data capture, project management and basic analysis all in one tool
- Hilti B12 battery platform

OUTPUT FROM PS 300

The PS 300 Ferroskan system is intended for the verification of reinforcing bars (Layout, concrete cover and diameter estimation of rebars)

Concrete cover



Check the concrete cover over the reinforcement.

Layout

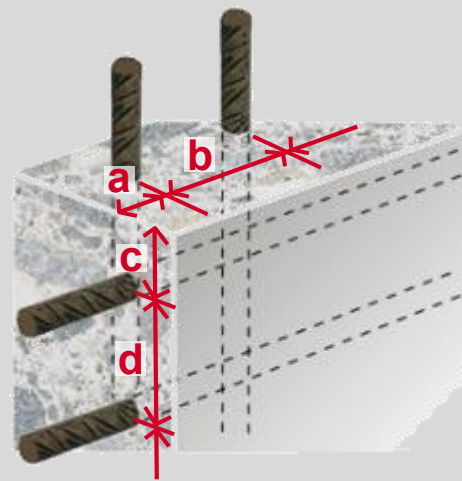
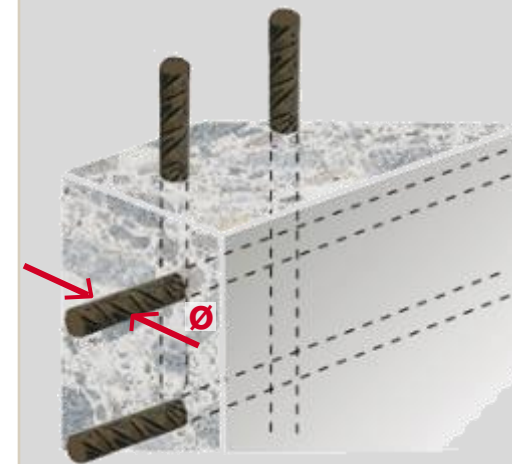


Figure out the exact layout of rebars.

Diameter estimation

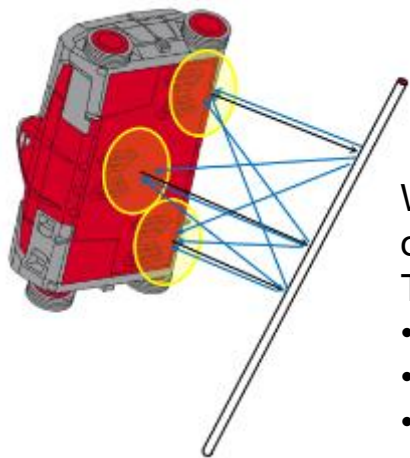
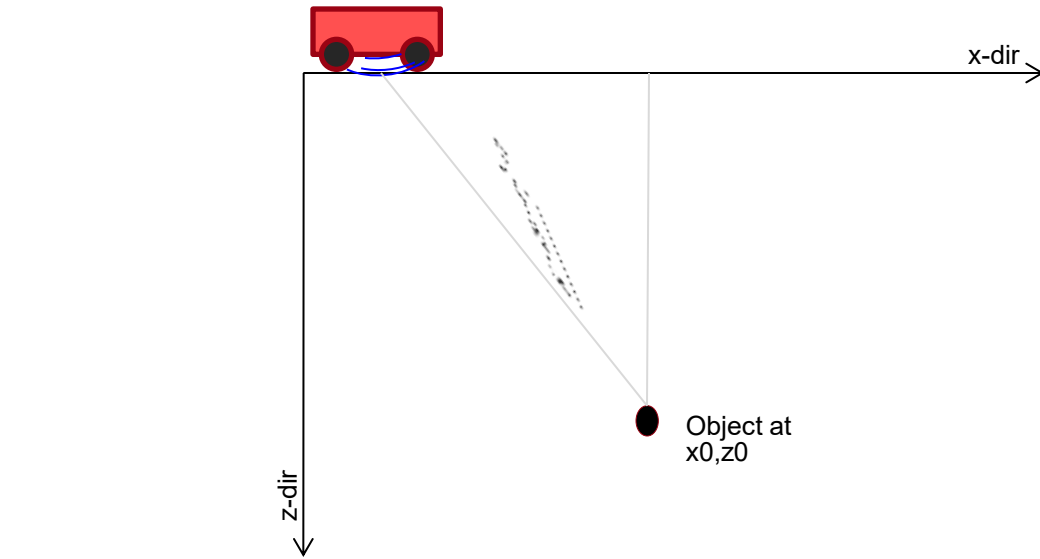


Evaluate the tensile strength of a structural member (taking layout into account).

PS 1000 – PULSE RADAR SYSTEM



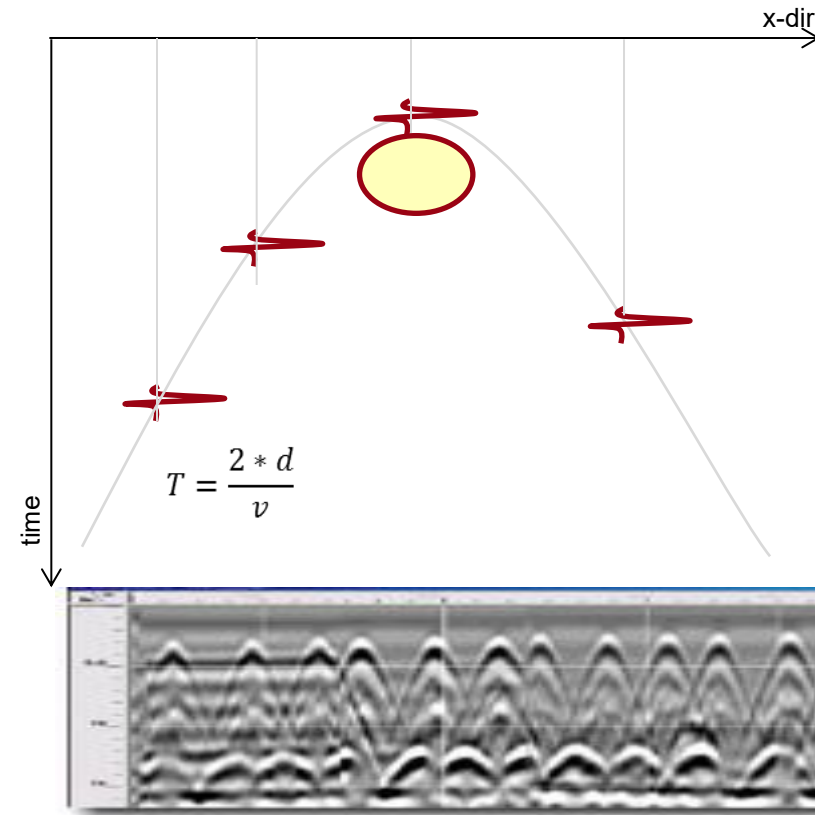
RADAR: BASIC PRINCIPLE – HOW OUR TOOL SIMPLIFIES THE OUTPUT



Why is three better than one?

Three antennas ensure:

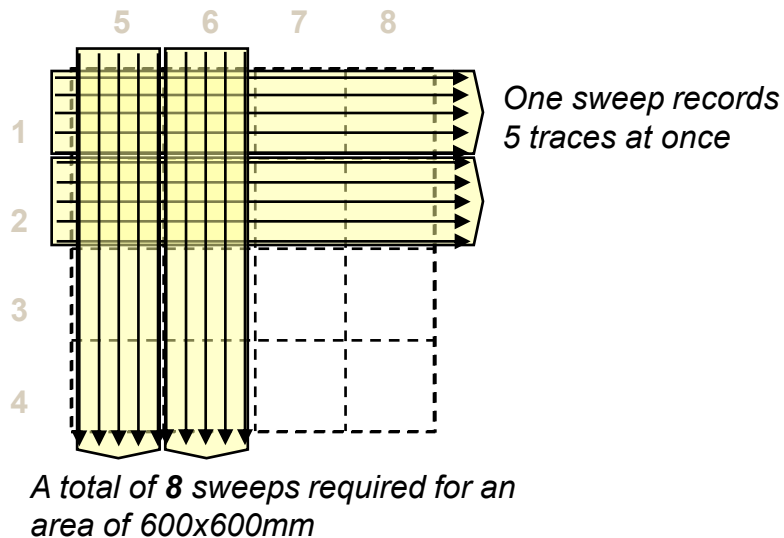
- Higher productivity
- Better data quality
- Better vertical resolution



The Apex of the curve indicates the position of the object in x and z-direction (curves are called «Detection Hyperbolas»)

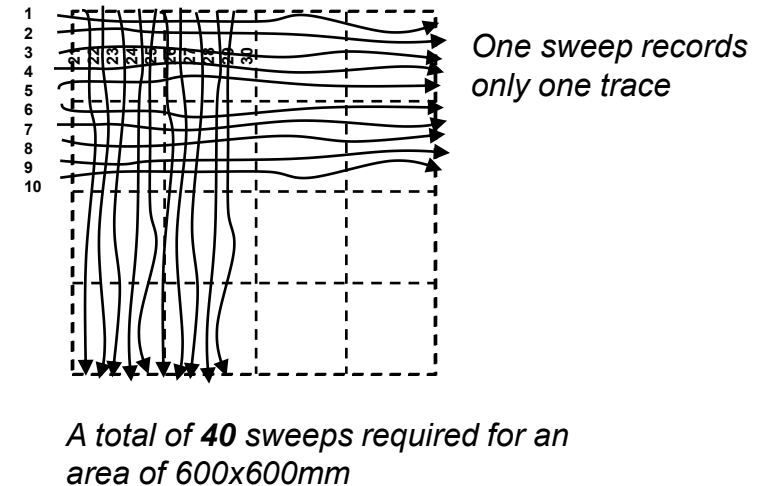
ANTENNA ARRAY SAVES TIME AND YIELDS HIGHER DATA QUALITY

PS 1000



- Better data quality/density due to fixed antenna position of array - faster recording
- Regular recording brings higher localization accuracy and allows better 3D migration
- Allows real time top view representation of the data in QS mode

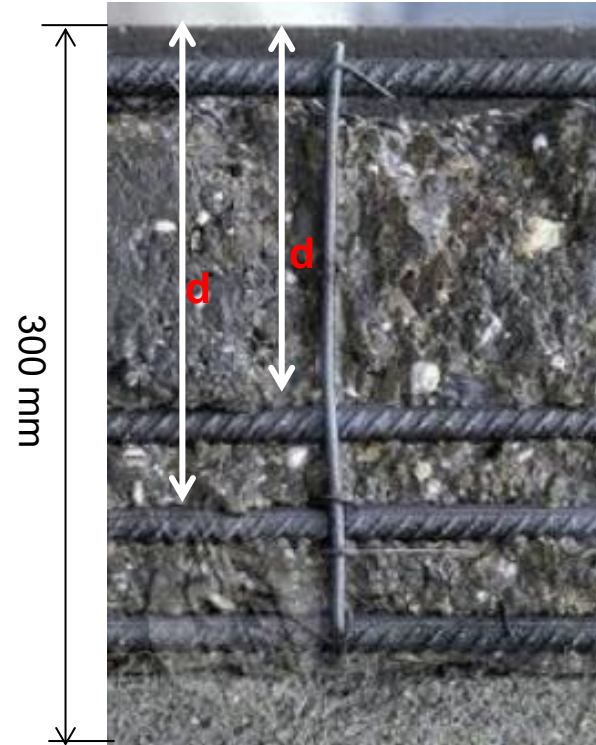
Competition



- With a single antenna each trace has to be scanned manually
- Using a single antenna system one has to do 5x more sweeps for the same density of data

80% productivity gain with more accurate output!

WHAT CAN PS 1000 DO?



- Can scan up to depth of 300 mm in dry concrete structures
- Can detect- Rebar, Tendon, Metal conduits, Plastic conduits, Glass fibre cables, for hit prevention i.e. safe drilling
- Can be used to identify PT cable
- Can be used to verify rebar layout and spacing

PS 1000 - BENEFITS

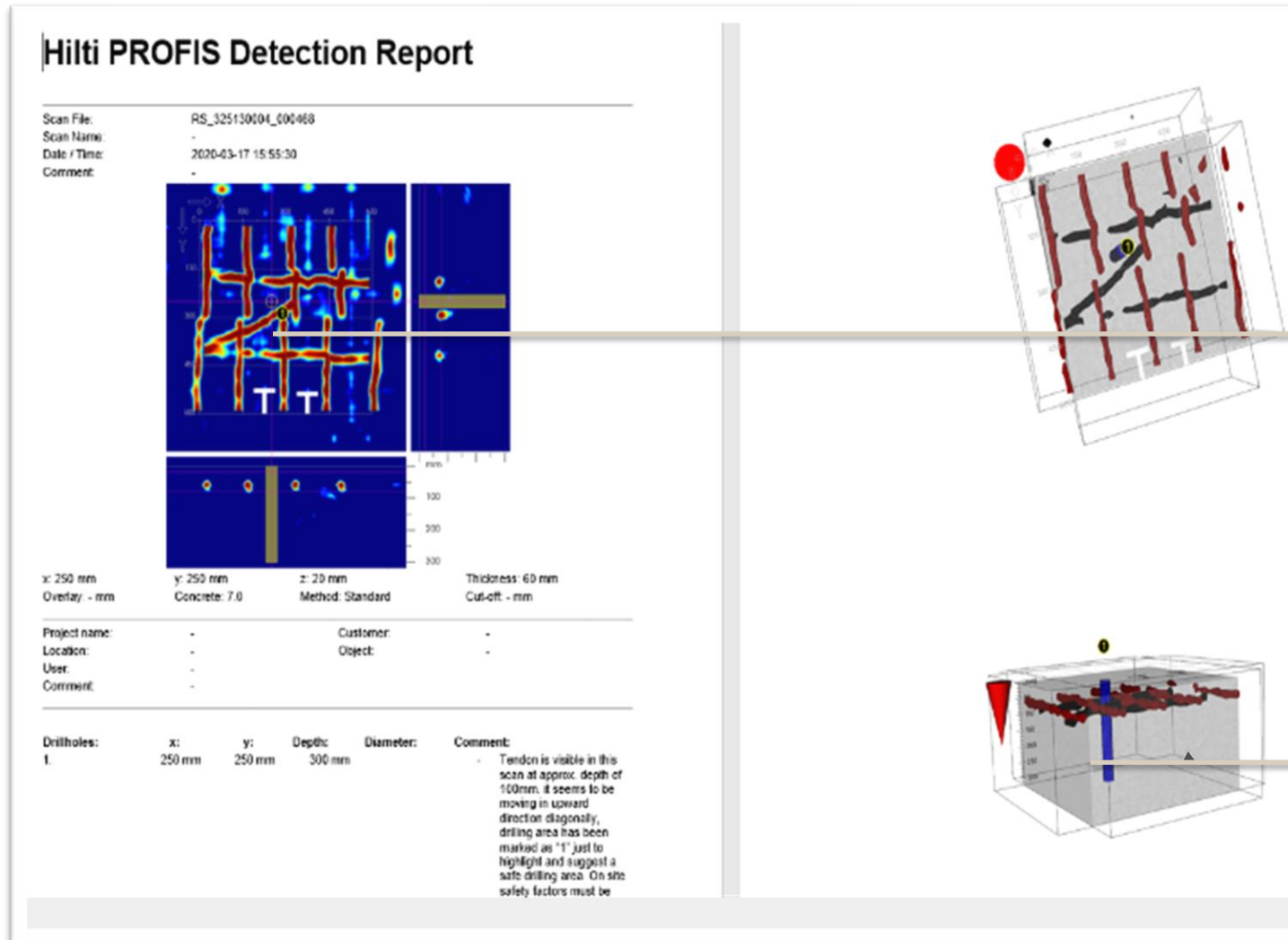
- Provides a real-time view of concrete structures for direct **on site evaluation of scan data** by the user
- Powerful monitor unit for in-depth, on-site scan analysis plus **PC software for subsequent data evaluation and documentation**
- Compact all-in one hand-held scanner offering easy, user-friendly operation, quick start-up for speed of use plus **unmatched data visualization**
- Features **2-D and 3-D data visualization** with top view and cross sectional views
- Displays a top view of the scan for easy mapping of the objects detected plus cross sections in both directions for **easy identification of multiple layers** in concrete structures
- Hundreds of square meters of concrete can be inspected in a day

PROFIS DETECTION SOFTWARE



SAMPLE SCANS – PS 1000

Complex Structures made easy to understand using our scanners



Tendon identified in the scan along with a clear rebar lay out for safe drilling area

3D view gives and excellent visualization of what lies inside concrete to drive to conclusions pretty fast.

FERROSCAN PS 300 VS X-SCAN PS 1000

	Ferrosan PS 300	X scan PS 1000
Principle	Magnetic induction	Radar
Use case	Hit prevention* Localization* Layout (spacing)* Analysis#	Hit prevention# Localization# Layout#
Layer	First layer*	Multilayer#
Material detected	Ferrous material*	Multi material#
Depth of scan	200mm	300mm





THANK YOU