



**PD Tech 佰迪科技**

# Product Presentation

Applicant Name: **PD Technologies Ltd**

Product Name: **GS8000 Ground Penetrating Radar**

Specification:

<b>Radar technology</b>	Stepped-frequency Continuous-Wave GPR
<b>Modulated frequency range</b>	40 – 3440 MHz
<b>Effective bandwidth</b>	3200 MHz
<b>Min. detectable object size</b>	Down to 1 cm at 0.5 m depth
<b>Max. Penetration depth</b>	Up to 10 m (typ. up to 6 m)
<b>Scan rate</b>	Up to 100 scans/m
<b>Acquisition speed</b>	Up to 80 Km/h at 50 mm scan interval
<b>Antenna positions</b>	Ground-coupled with dual-axis floating Air-coupled with 25 mm clearance  One-turn switching system
<b>Dimensions</b>	610 x 570 x 380 mm
<b>Weight</b>	23 Kg
<b>Battery</b>	Flight-safe, removable, rechargeable 8x NIMH C-battery pack, slot for PB-USB power bank  Full working day autonomy
<b>GNSS receiver</b>	Multiband GNSS, typ. 1-5 cm accuracy  SSR augmentation included (EU & US/CAN) Compatible with network RTK services  Dimensions: 145 x 145 x 70 mm Weight: 0.7 Kg, 4x AA-batteries included

• Core Functions:

Asset inspection, underground surveys, utilities locating

• Technology Used:

Stepped Frequency Continuous Wave SFCW

• Construction Process involved:

Rebar location and mapping, concrete floor slab surveys, chimney flue location, location of voids below concrete slabs, detecting embedded metal in mason, and much more.

• Key Improvement in Construction Process:

- Productivity
- Quality
- Safety
- Environmental

Job Reference:

Winslow Constructors, Australia, adoption, 2020

Utility Mapping, Australia, adoption, 2020

Dinas Tata Kota Tangerang Selatan, Indonesia, adoption, 2020

Hesa Laras Cemerlang, Indonesia, adoption, 2020

PT Hesa Laras Cemerlang, Indonesia, adoption, 2020

# Innovative Features

- Core Technology:

## Stepped Frequency Continuous Wave SFCW

- Patent (if applicable): **Yes**

- Comparison with current practice and popular models:

- Comparison with similar Pre-approved list products and competitors:

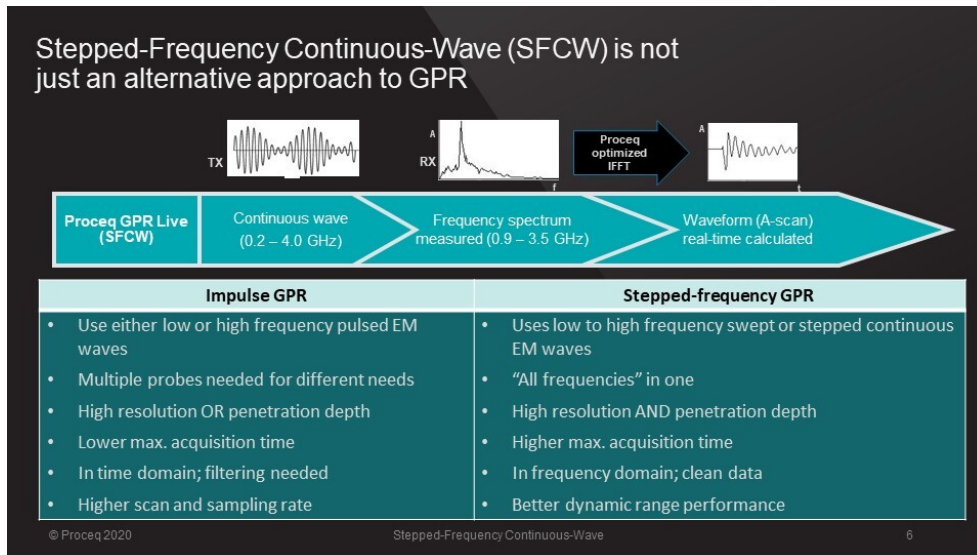
- Frequency range 40-3440 MHz in one system
- 2x data quality
- 3x productivity
- cm grade mapping accuracy

- First Launch Date: **2020**

- Awards (if applicable):

- **International**
- **Local**

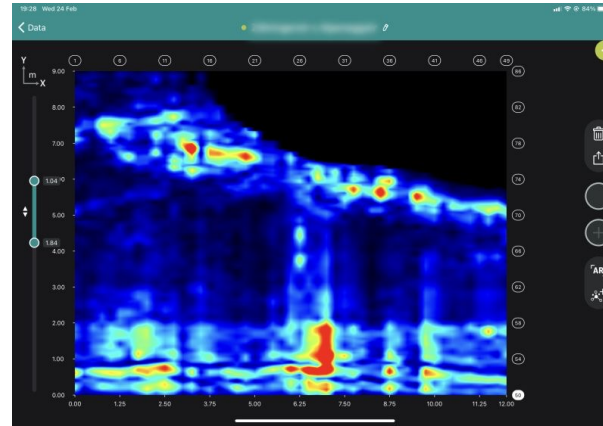
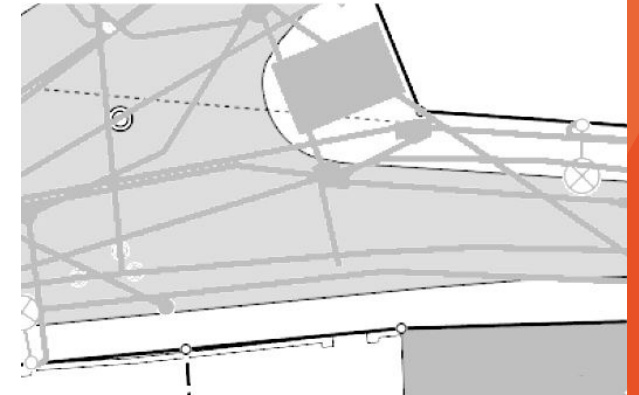
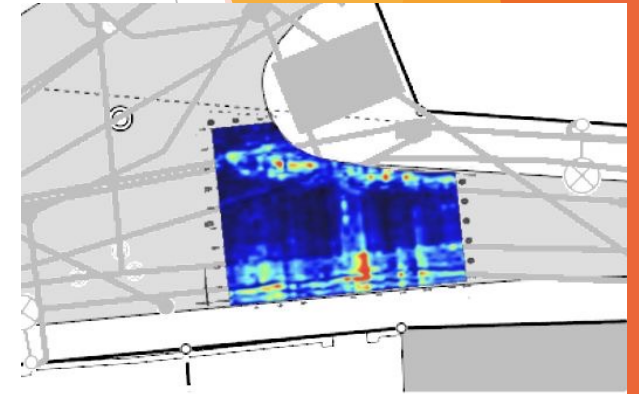
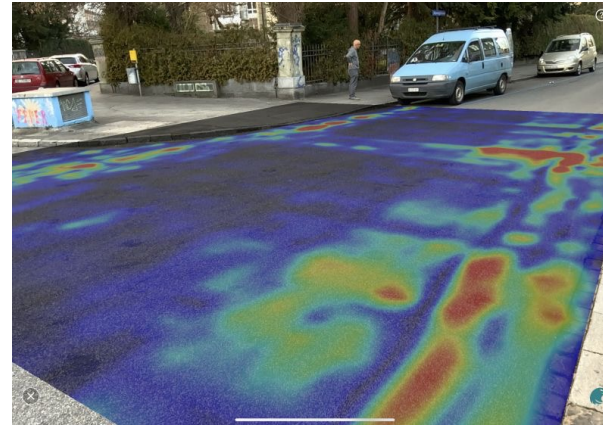
Stepped-Frequency Continuous-Wave (SFCW) is not just an alternative approach to GPR



Impulse GPR	Stepped-frequency GPR
<ul style="list-style-type: none"> <li>• Use either low or high frequency pulsed EM waves</li> <li>• Multiple probes needed for different needs</li> <li>• High resolution OR penetration depth</li> <li>• Lower max. acquisition time</li> <li>• In time domain; filtering needed</li> <li>• Higher scan and sampling rate</li> </ul>	<ul style="list-style-type: none"> <li>• Uses low to high frequency swept or stepped continuous EM waves</li> <li>• "All frequencies" in one</li> <li>• High resolution AND penetration depth</li> <li>• Higher max. acquisition time</li> <li>• In frequency domain; clean data</li> <li>• Better dynamic range performance</li> </ul>

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# Adoption Example



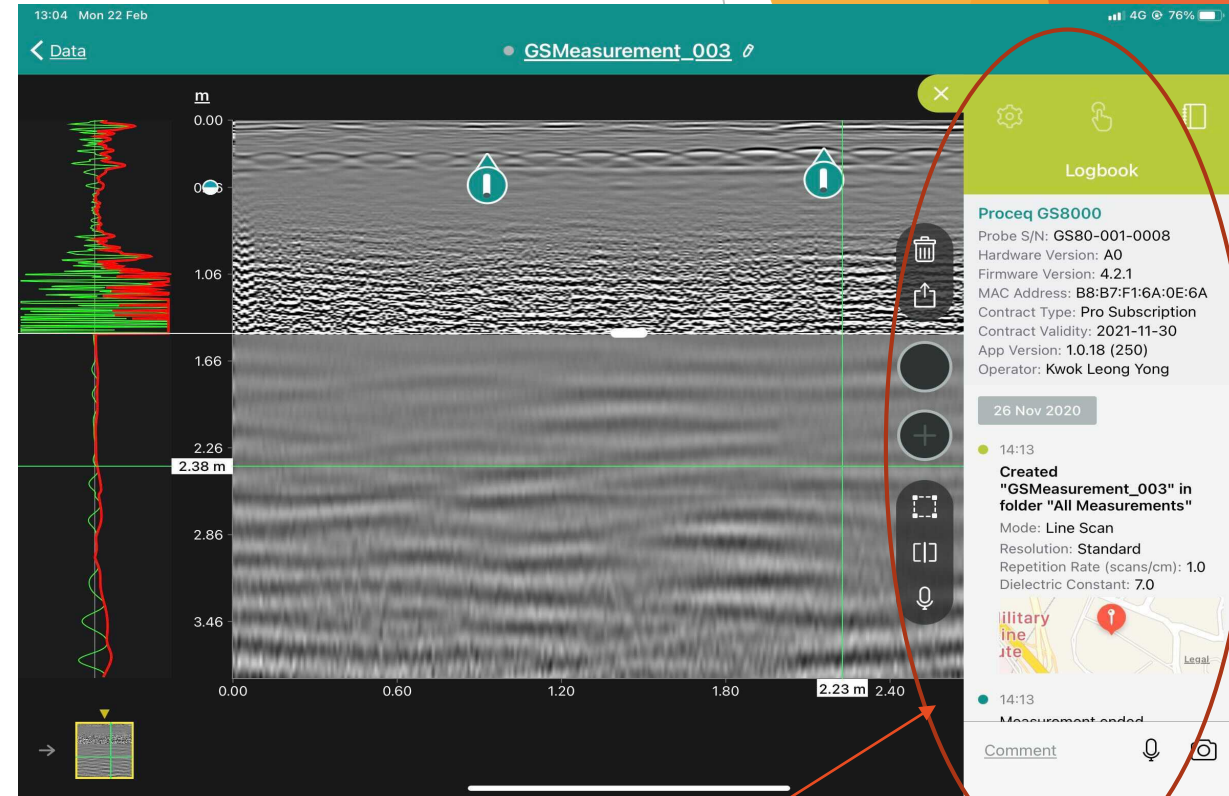


# Benefits – Productivity (if applicable)

- Improve productivity by:

- Optimized data acquisition and interpretation which reduces office processing all the way to deliverables.
- Bringing the field insight to the office with Instant CAD/GIS deliverables, Rich reporting & logbook , Deployed over the cloud.
- Sample report :

[https://live2.proceq.com/h/gpr\\_soil?k=2jMp\\_aADp&n=1&d=sg.live2.proceq.com](https://live2.proceq.com/h/gpr_soil?k=2jMp_aADp&n=1&d=sg.live2.proceq.com)

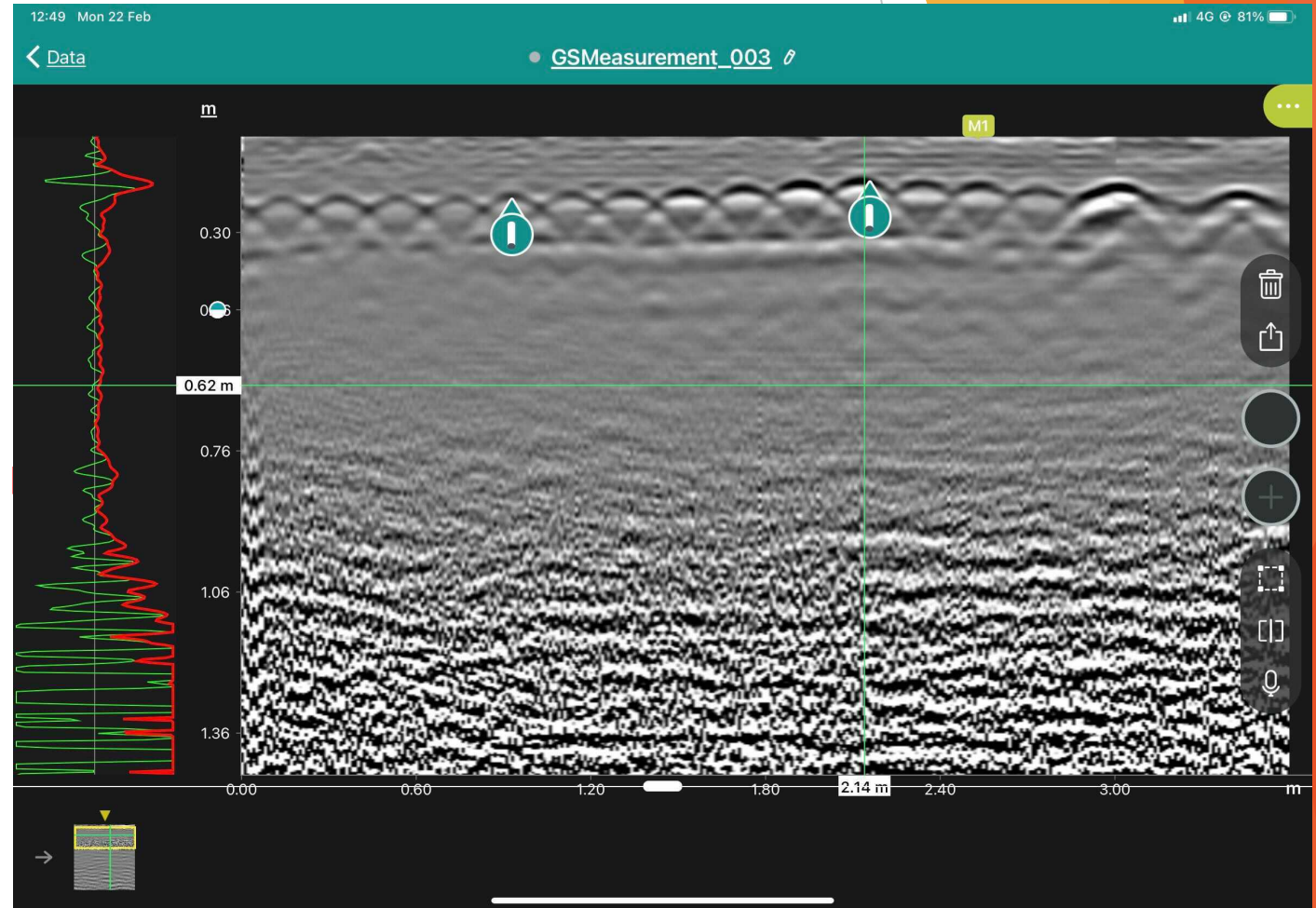


Logbook which indicated the location

# Benefits – Quality (if applicable)

- Improve quality by:

- Ability to locate underground objects at different depth levels, including small objects such as 25-50mm PVC Gas pipes, which are not visible for traditional GPR systems
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- Ability to precisely geo-reference all findings, facilitating the update of the as-built digital twin



## Benefits – Safety (if applicable)

- Improve Safety by:
  - No wires connection. All connection of the GNSS and display can use Wifi connection which prevent trip hazard



All connection from the main instrument to the display unit (lpad) is through WIFI



## Benefits – Environmental (if applicable)

- Improve Environmental Performance by:
  - Equipment is power by generic rechargeable batteries and power banks is good for environment because we contribute to less waste overall



Qty:09 generic rechargeable batteries used



Generic rechargeable battery





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