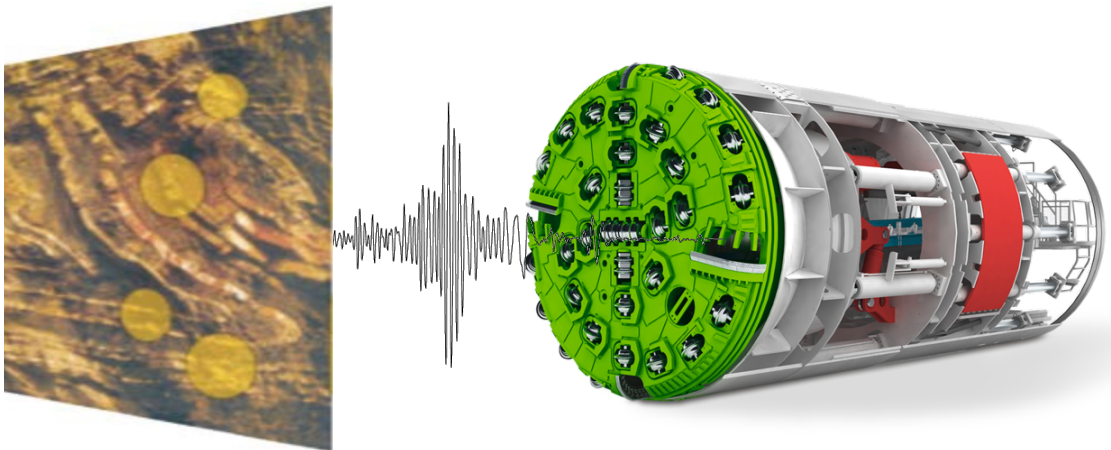




SmartBoring 1.0

Tunnel look-ahead system



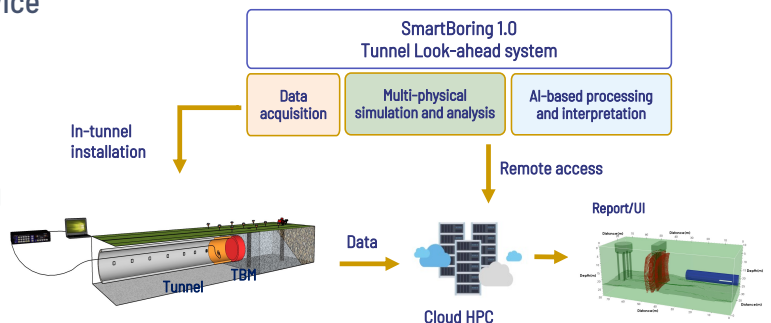
**An efficient, high-resolution, non-destructive,
non-disruptive solution for tunnelling risk predictions**

SmartBoring 1.0

Tunnel look-ahead system

SmartBoring 1.0 provides one-stop service including data acquisition, processing, interpretation, and reporting. The system features:

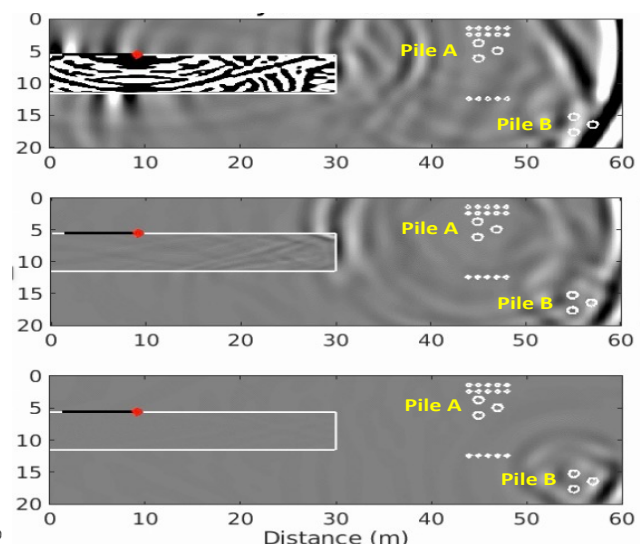
- Multi-physical, multi-resolution sensing
- Active and passive imaging technology
- Data-driven physics-based AI solution



Case example: Abandoned pile detection in Singapore

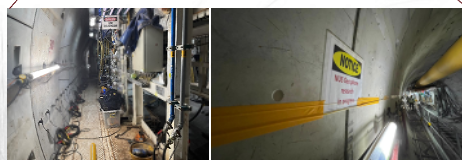
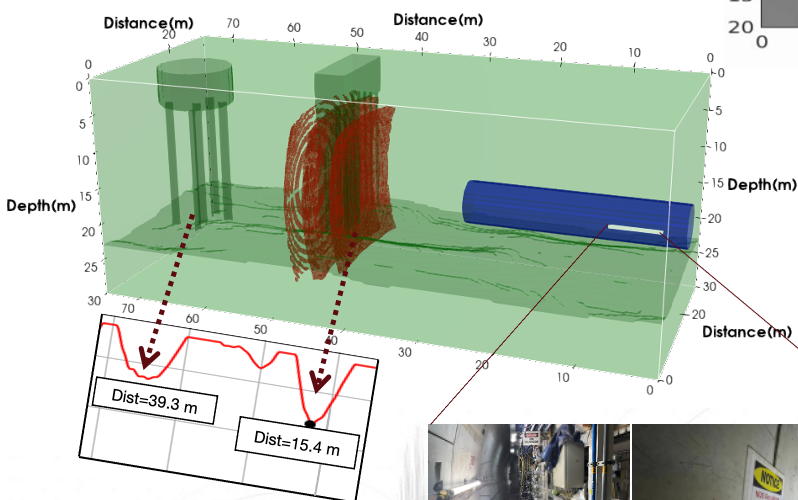
Partnered with Singapore Land Transport Authority during the the Circle Line MRT construction, **SmartBoring 1.0** system was demonstrated to detect pre-existing infrastructure.

- Detection range: 40 m
- Resolution: < 1 m diameter pile group
- Positional accuracy: ~ 97% of target distance



SmartBoring 1.0 In-tunnel physical simulations

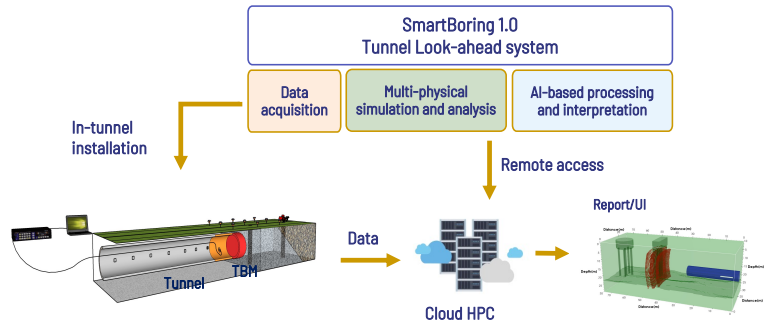
- TBM type: EPB
- Sensor deployment: 100% in tunnel
- Data acquisition time: 30 min
- Data processing time: 10 min



智能掘进 1.0 隧道超前探测系统

智能掘进 1.0 为隧道超前探测提供一站式数据采集、处理、解释和可视化服务。系统特点包括：

- 多物理场、多尺度探测
- 主动源、被动源协同探测
- 基于数据驱动和物理架构的人工智能解决方案

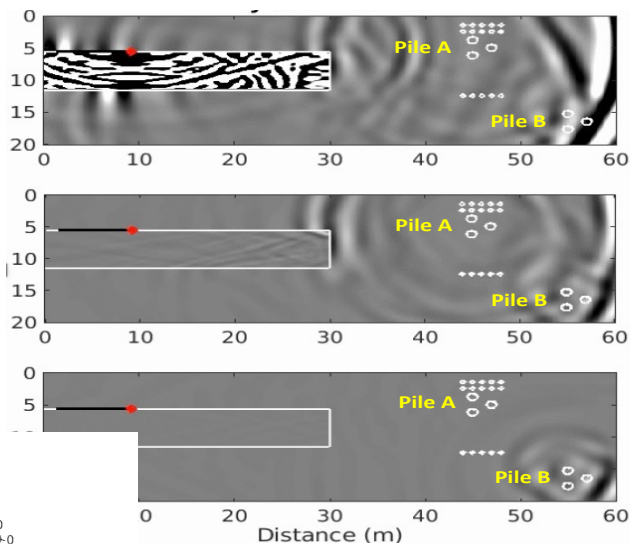


案例：遗留高速路桩探测 – 新加坡

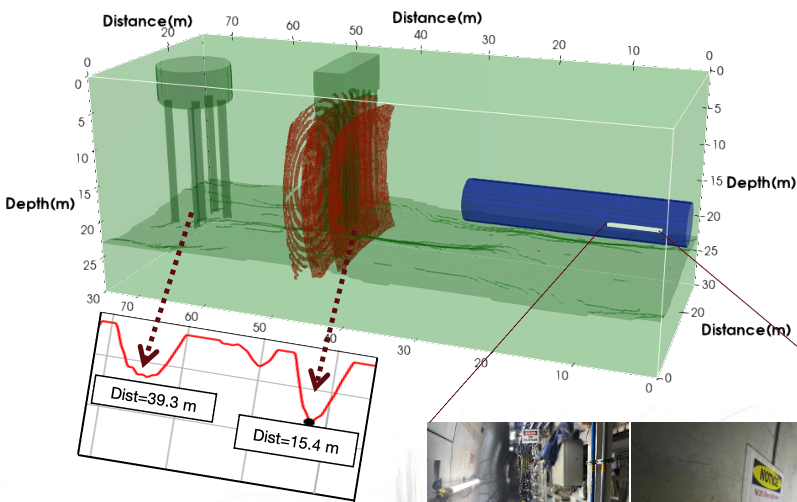
智能掘进1.0系统在新加坡环线地铁建设测试中取得了优异成绩：

- 探测距离：40 m
- 分辨率：路桩直径 < 1 m
- 位置误差：± 3%

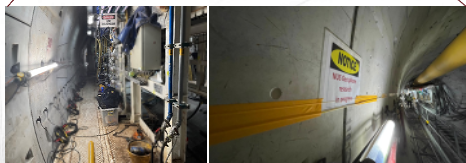
（合作方新加坡陆路交通局）



智能掘进1.0 隧道波动场模拟



- 盾构机类型: EPB
- 传感器布置: 100% 隧道中布线
- 数据采集时间: 30 min
- 数据处理时间: 10 min



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