Department of Natural Resources, Mines and Energy

‘Good models start with great data’

QWMN Forum 2020

Queensland Government

Hydrographic Support Unit (HSU)

- Divisional Support, Water
  - Regional QMS – ISO 9001:2015
  - HSU QMS – ISO 9001:2015
  - HSU OHSMS – AS/NZS 4801:2001
    - Formal transition to ISO 45001:2018 in May 2020

- Water Monitoring Information Systems, LSI
  - Corporate data storage
  - Data publishing to WMIP
  - Pipeline feeds to water modellers

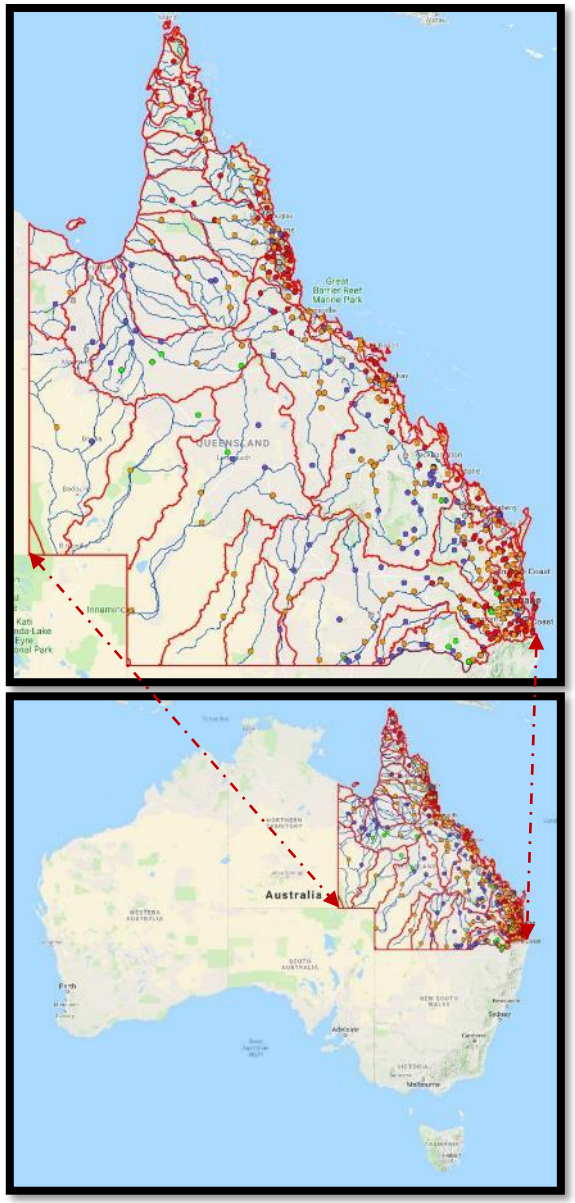
Water Monitoring Information Portal

https://water-monitoring.information.qld.gov.au

Current telemetry deployment:

- Over 400 streamflow sites
- Over 300 groundwater sites
- 50 standalone pluvio sites

Modern, fit for purpose network for the provision of timely, reliable and accurate data.

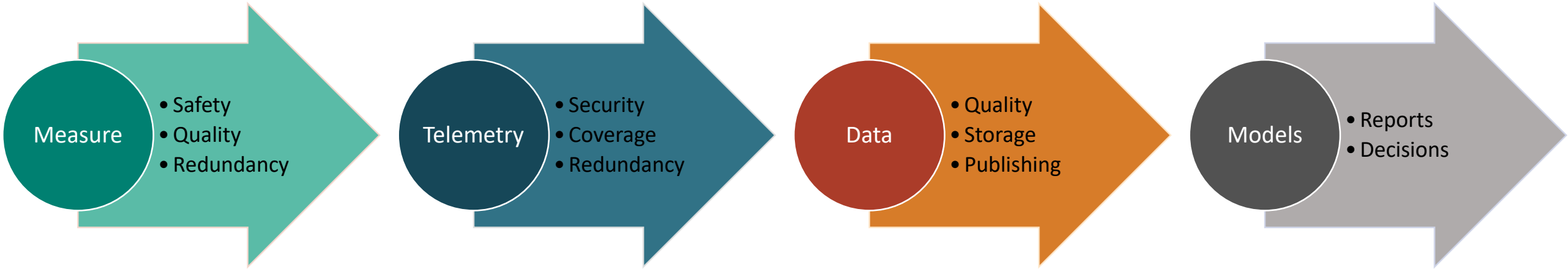


Shared Sites/Modelling

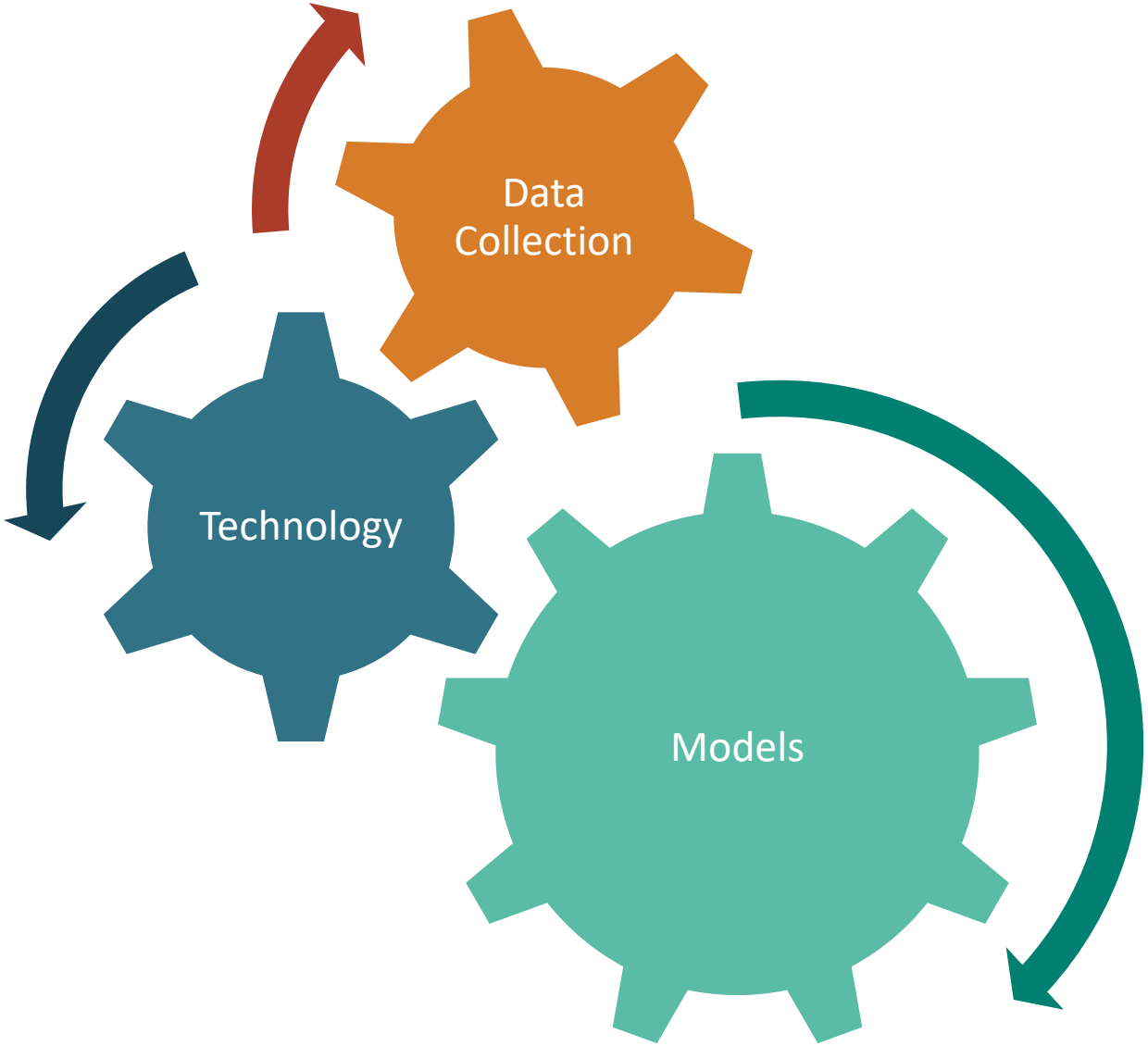
- Bureau of Meteorology (BOM)
- Local Councils
- SEQ Water

- Water Allocations
- Dam Design/Operation
- Resource Operational Plans
- Flood Warning
- Water Quality
- Sediment Loads
- Aquaculture
- Road/Bridge Design

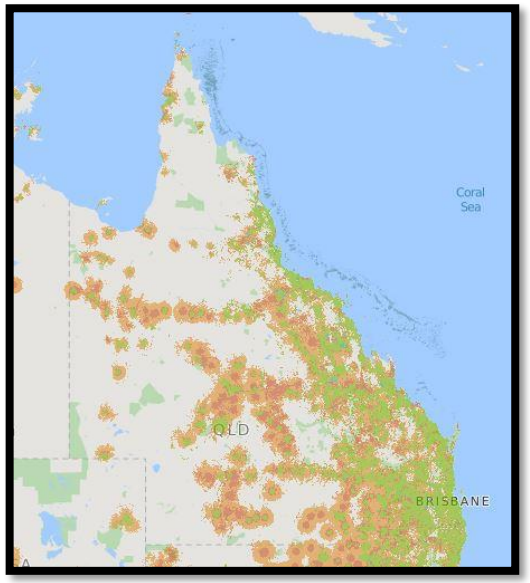
Our Pipeline Model

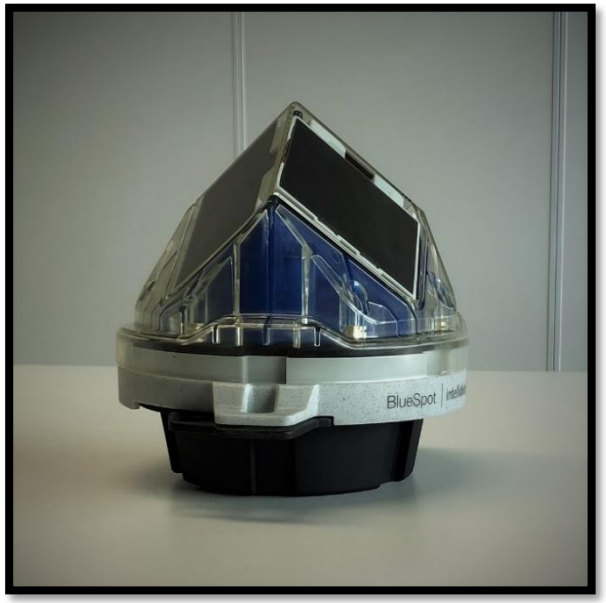


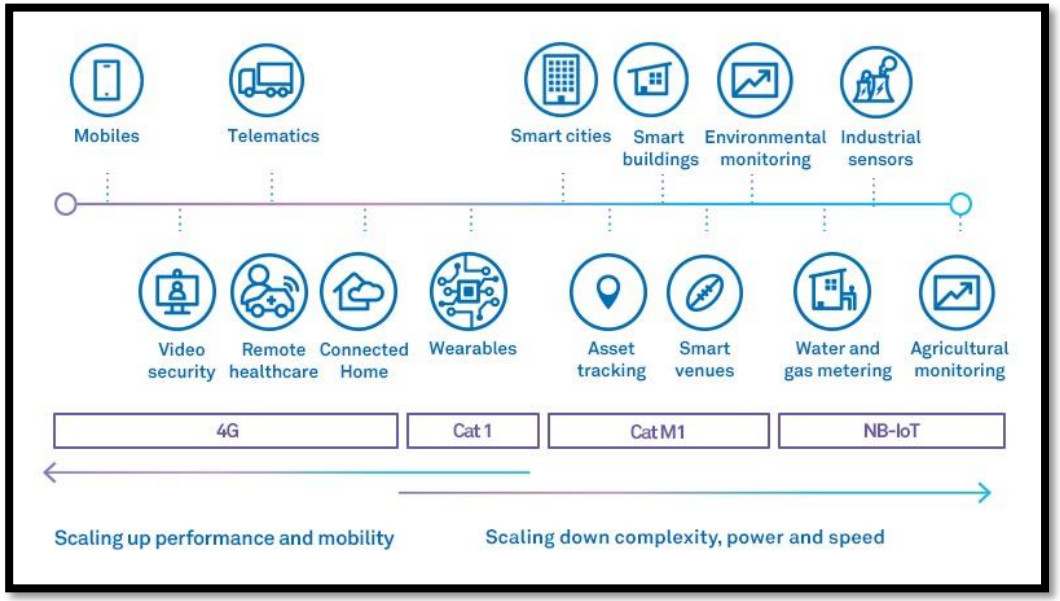
Key Challenges

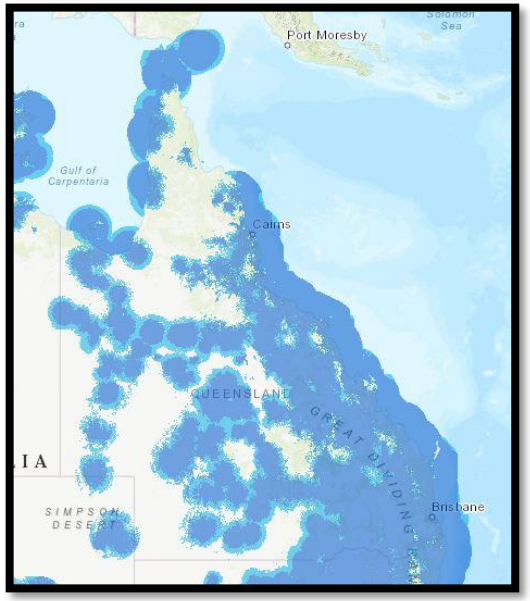


Cat M1 & Narrowband (NB1) IoT

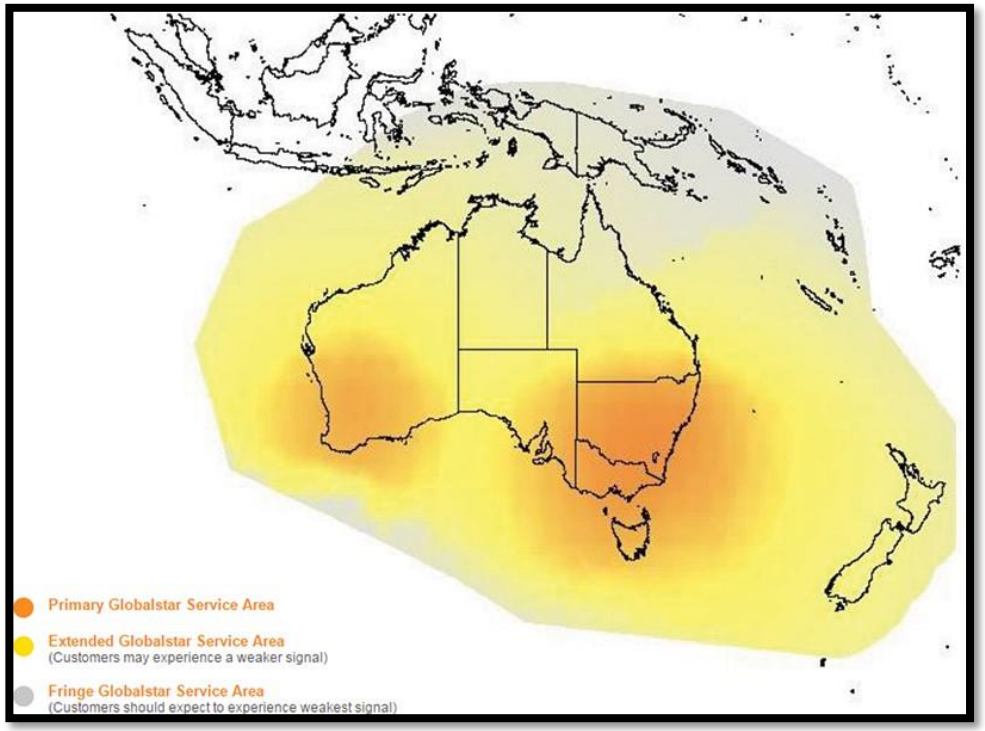






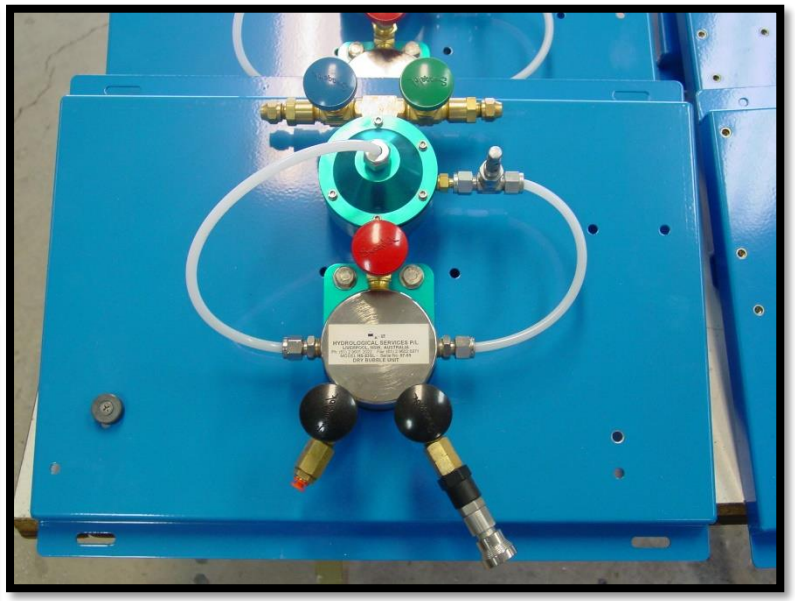


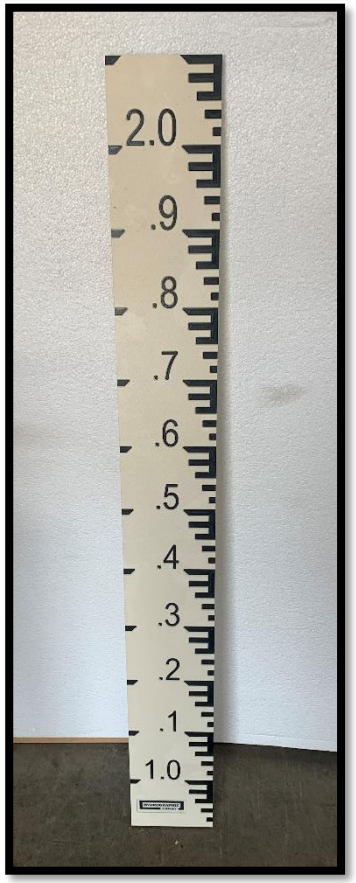
Satellite Telemetry



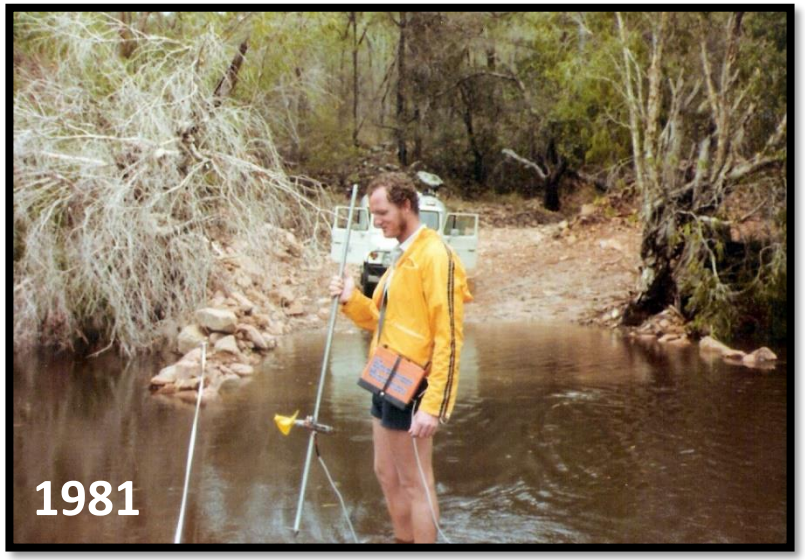
Standalone Pluviograph (Rainfall)

Water Level Measurement

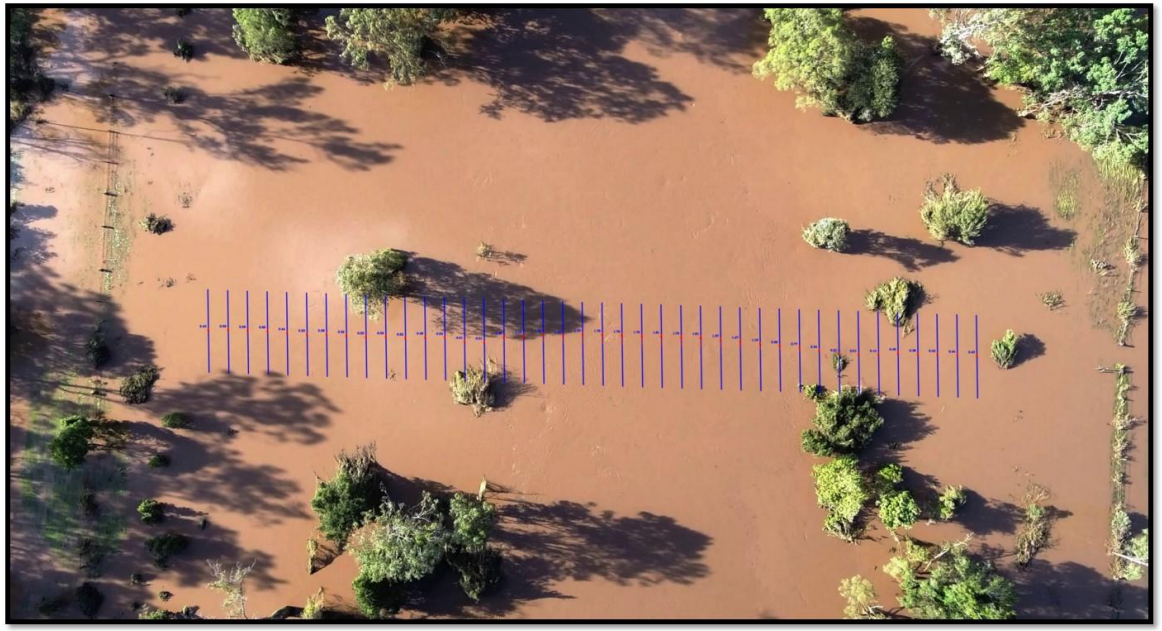


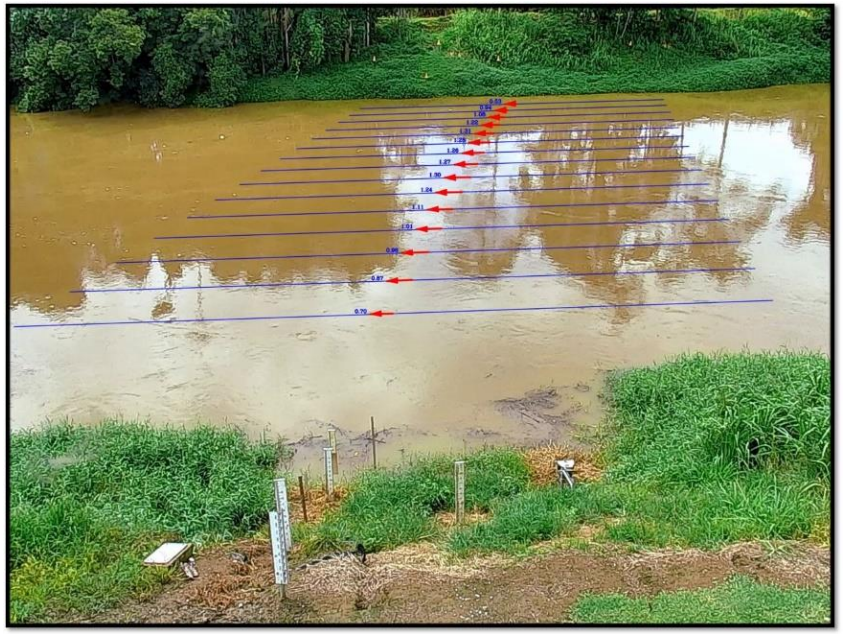


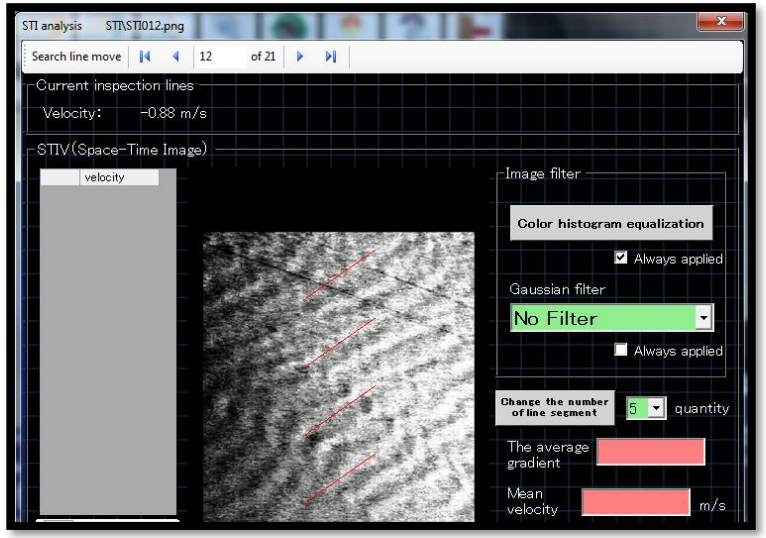
Stream Gauging



Space-Time Image Velocimetry (STIV)







Project Tethys 2019-2020

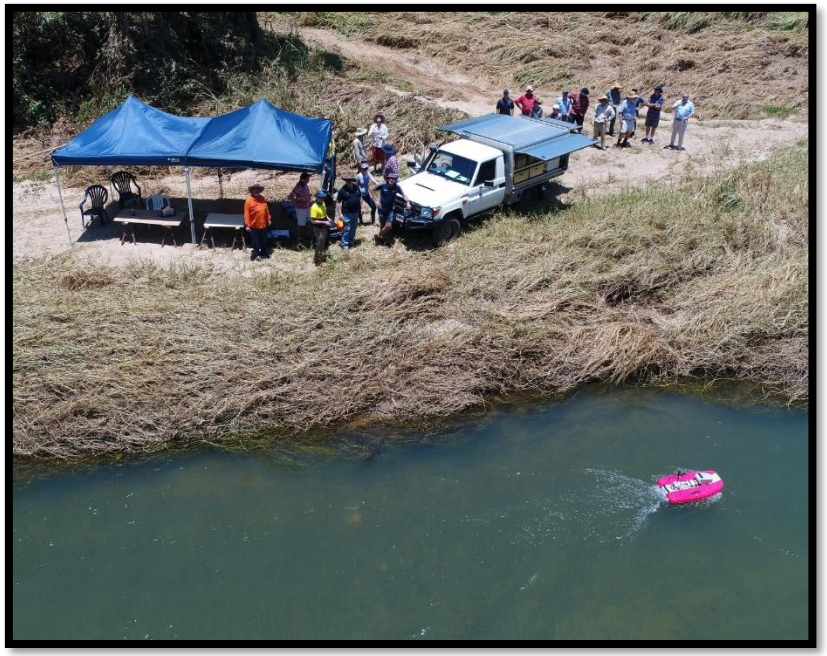
- Expand WMIS to cater for Doppler and video data
  - Automated and manual processing
- Capability for automated monitoring of logger network health
  - Daily ‘heartbeat’
- Develop network management tool
  - Health dashboard
- Corporate API link to Telstra Data Hub
  - IoT data cloud
- Develop low-cost monitoring systems
  - Field deployment of IoT devices

Future Goals

- Non-contact Flow Measurement
  - Cameras
  - Image processing for level data
  - STIV processing for discharge
- Suspended Sediments
  - Acoustic Dopplers
  - Time series data
- Micro Satellites
  - Lower cost data packets
  - Higher uptime

Final Challenge

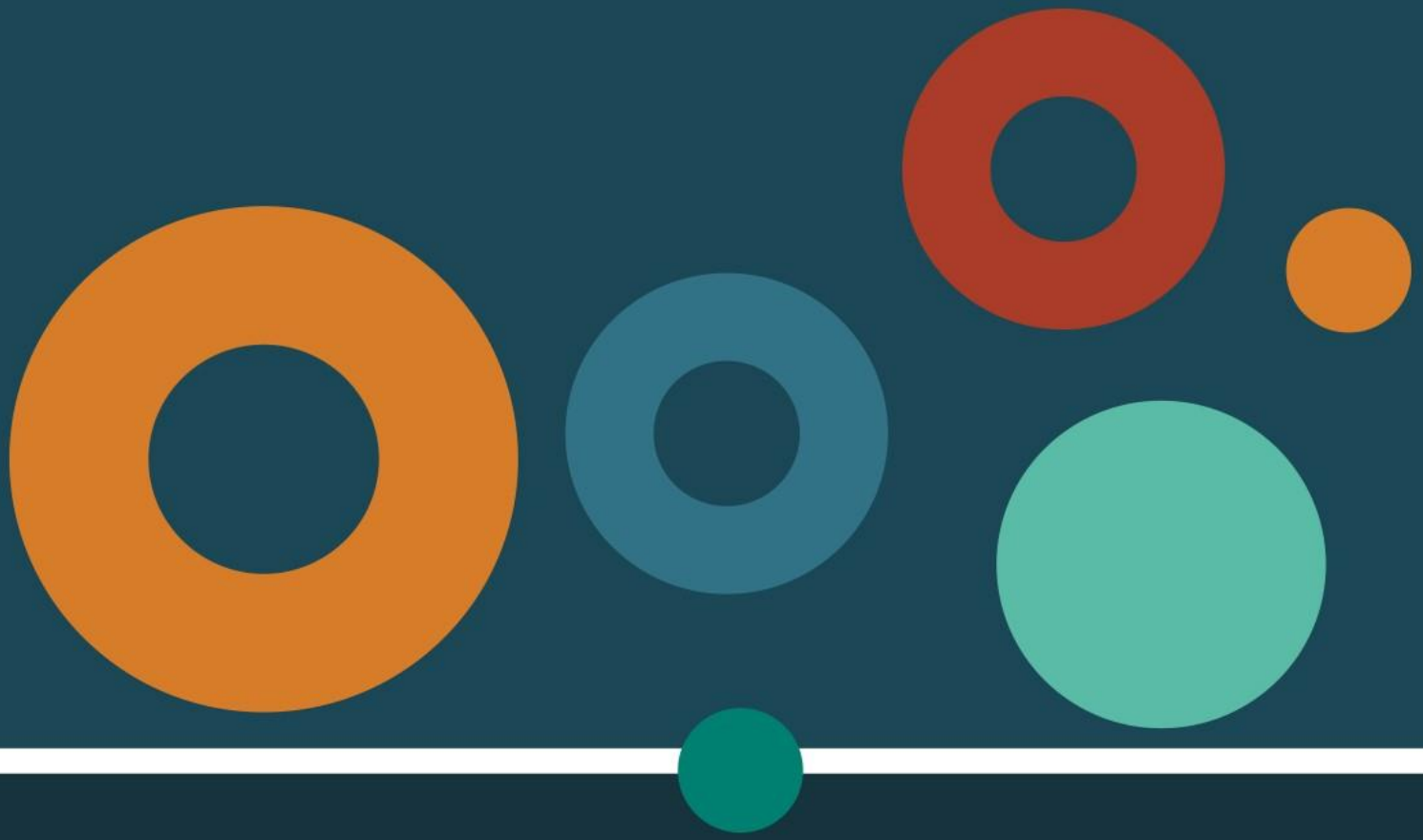
- Sharing knowledge and collaboration
  - Working with local councils
  - Developing with industry
    - Telstra, Myriota
    - Pacific Data Systems, mIoT, Halytech, IntelliDesign
  - Teaming up with universities
  - Collaborating with other government departments



- **How can we help you access our data to improve your models?**

Questions?

Email: dejan.subaric@dnrme.qld.gov.au



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