

Presented by: Aaron Ambler
FME World Tour Brisbane Australia
9th May 2019

Powerlink Spatial Emergency Readiness



About Powerlink



Powerlink is a leading Australian provider of high voltage electricity transmission network services, combining innovation with insight to deliver safe, cost effective and reliable solutions.



We are a Queensland Government Owned Corporation that owns, develops, operates and maintains the transmission network that extends 1,700km from north of Cairns to the New South Wales border, and comprises 15,337 circuit kilometres of transmission lines and 140 substations.

The Emergency Readiness Project Team

Mark West – Manager of Technical Information Services

Aaron Ambler – Information & Services Team Leader

Alexie Radun – Data & Systems Team Leader

Matthew Cooper – Information Analyst

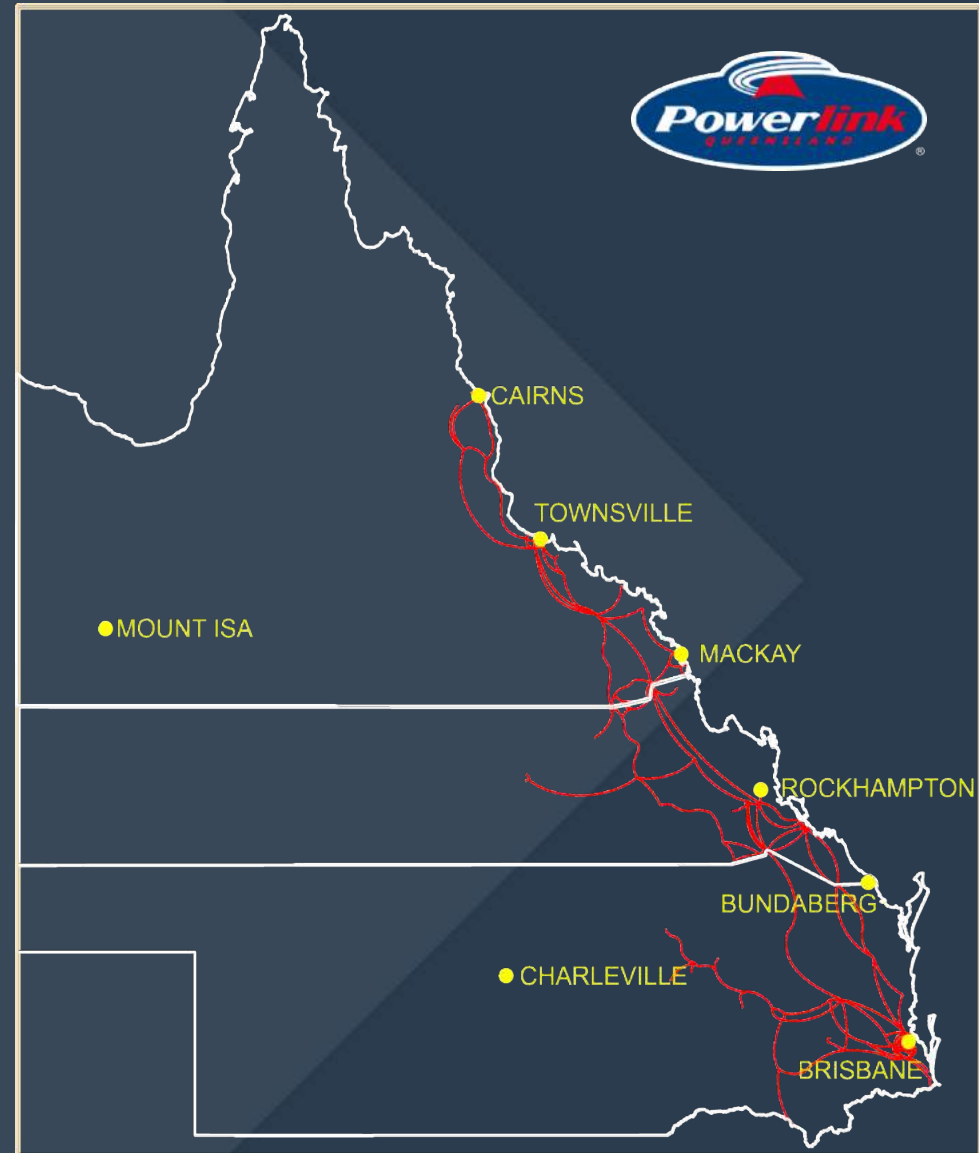
John Mockler – Information Analyst

Tim Mackay – Spatial Coordinator

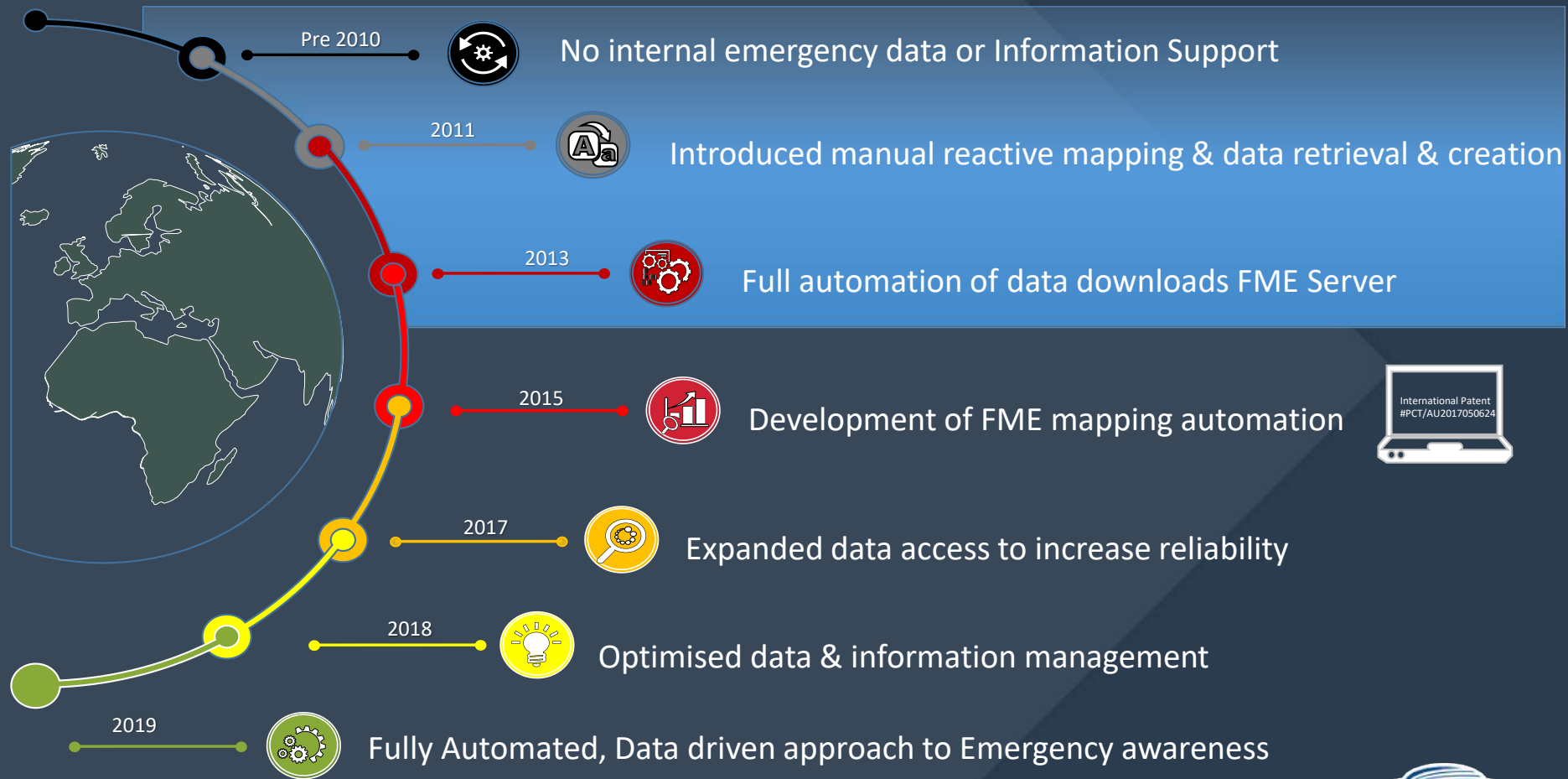
Ron Innes – Project Server Coordinator

Kyle Morris – Information Support Specialist

John Marshall – FME Developer



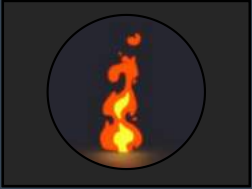
Emergency Spatial Journey



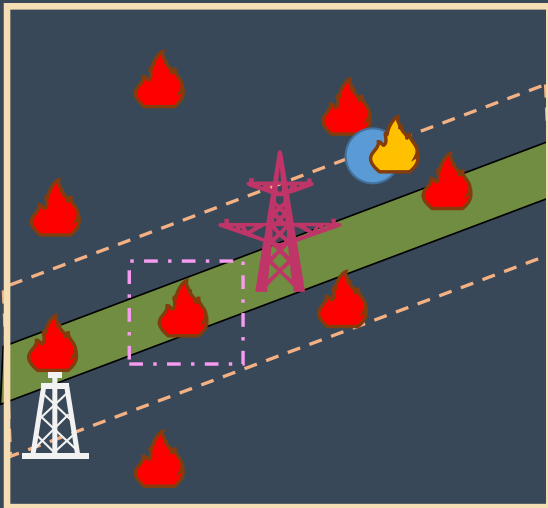
System Methodology



Bushfire Workflows



Fire started



Legend

- Sentinel
- QRFS
- Planned Burns
- Gas Wells
- PQ Easement
- Buffered Area

Analysis Risk levels

Bushfire Low Risk

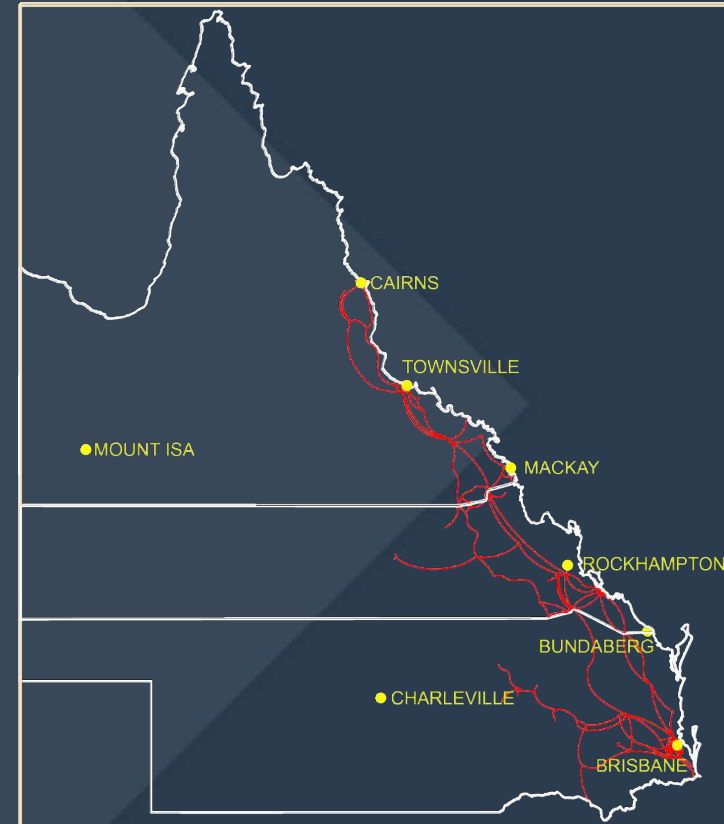
- Gas Wells
- QRFS Planned Burns
- QRFS

Bushfire Medium Risk

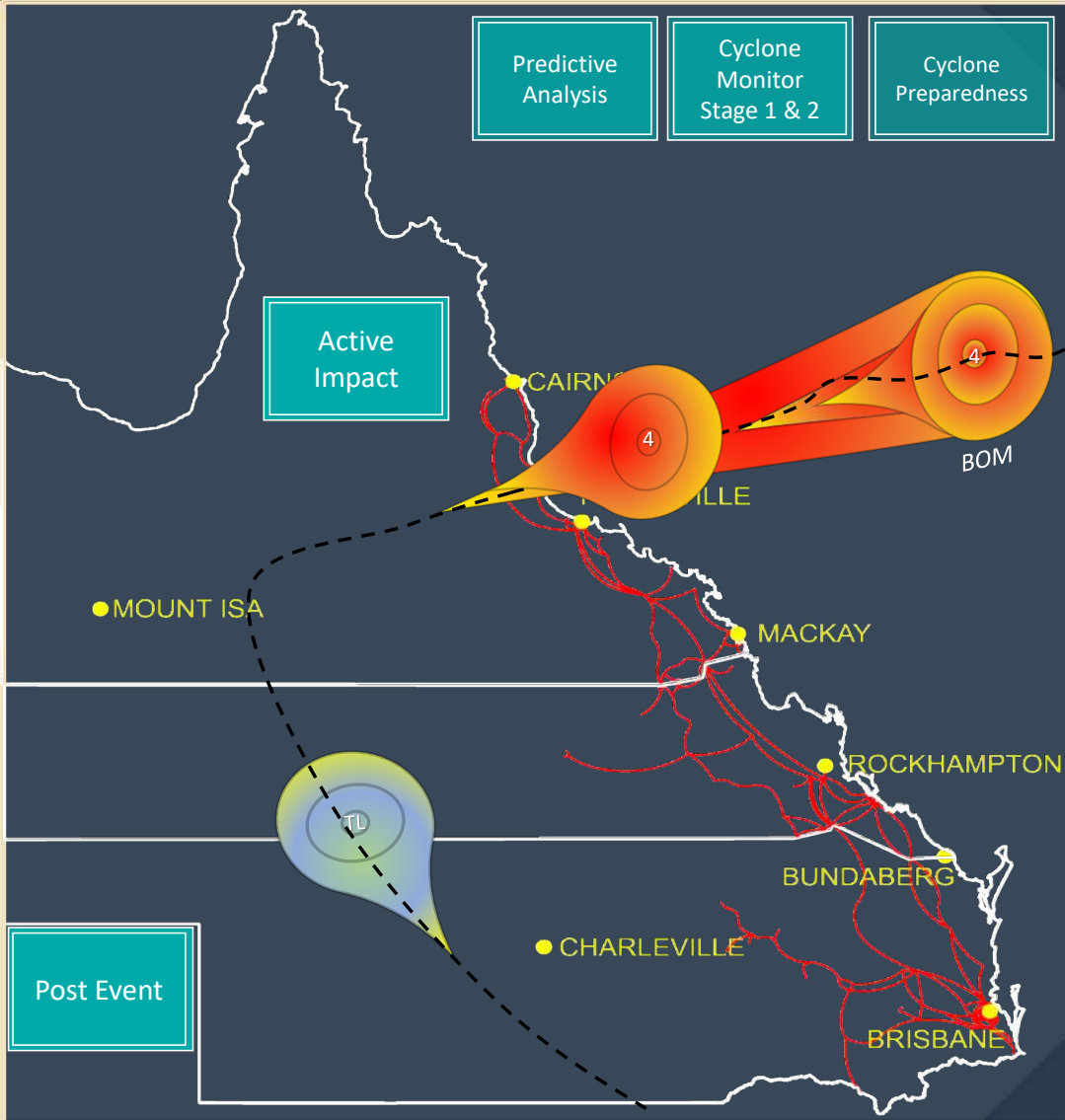
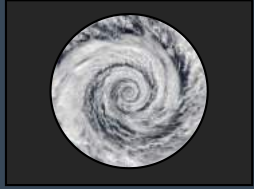
- QRFS
- Sentinel – all Sentinel less than business criteria

Bushfire High Risk

- Sentinel ≥ 50 Power and ≥ 80 Confidence



Cyclone Workflows



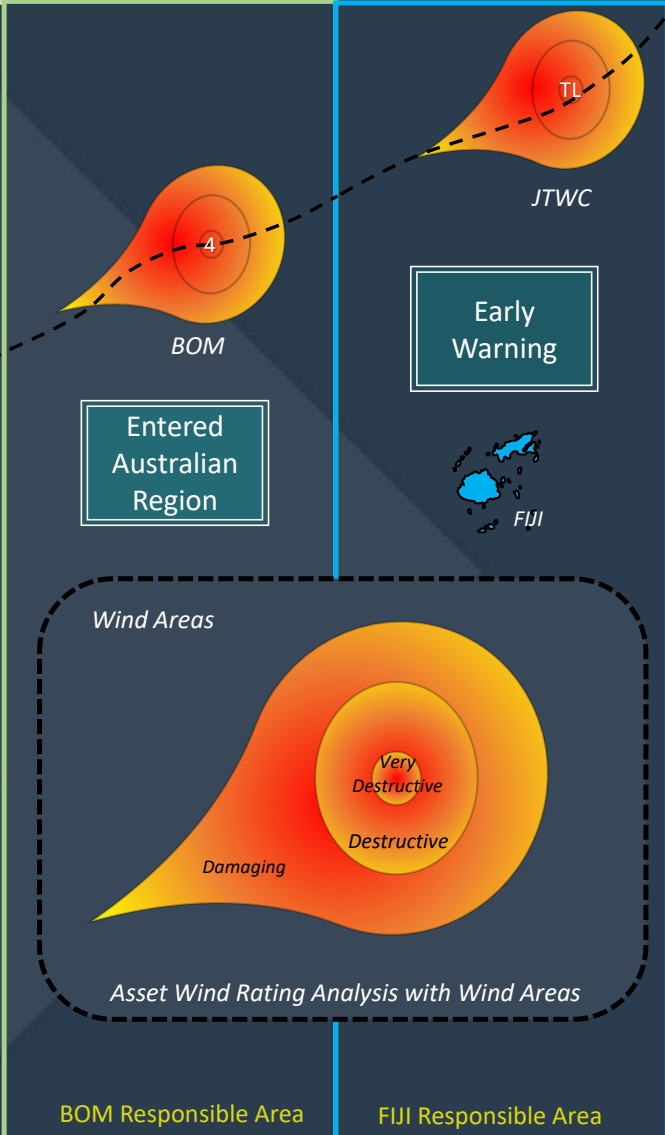
Predictive Analysis

Cyclone Monitor Stage 1 & 2

Cyclone Preparedness

Active Impact

Post Event



Entered Australian Region

Early Warning

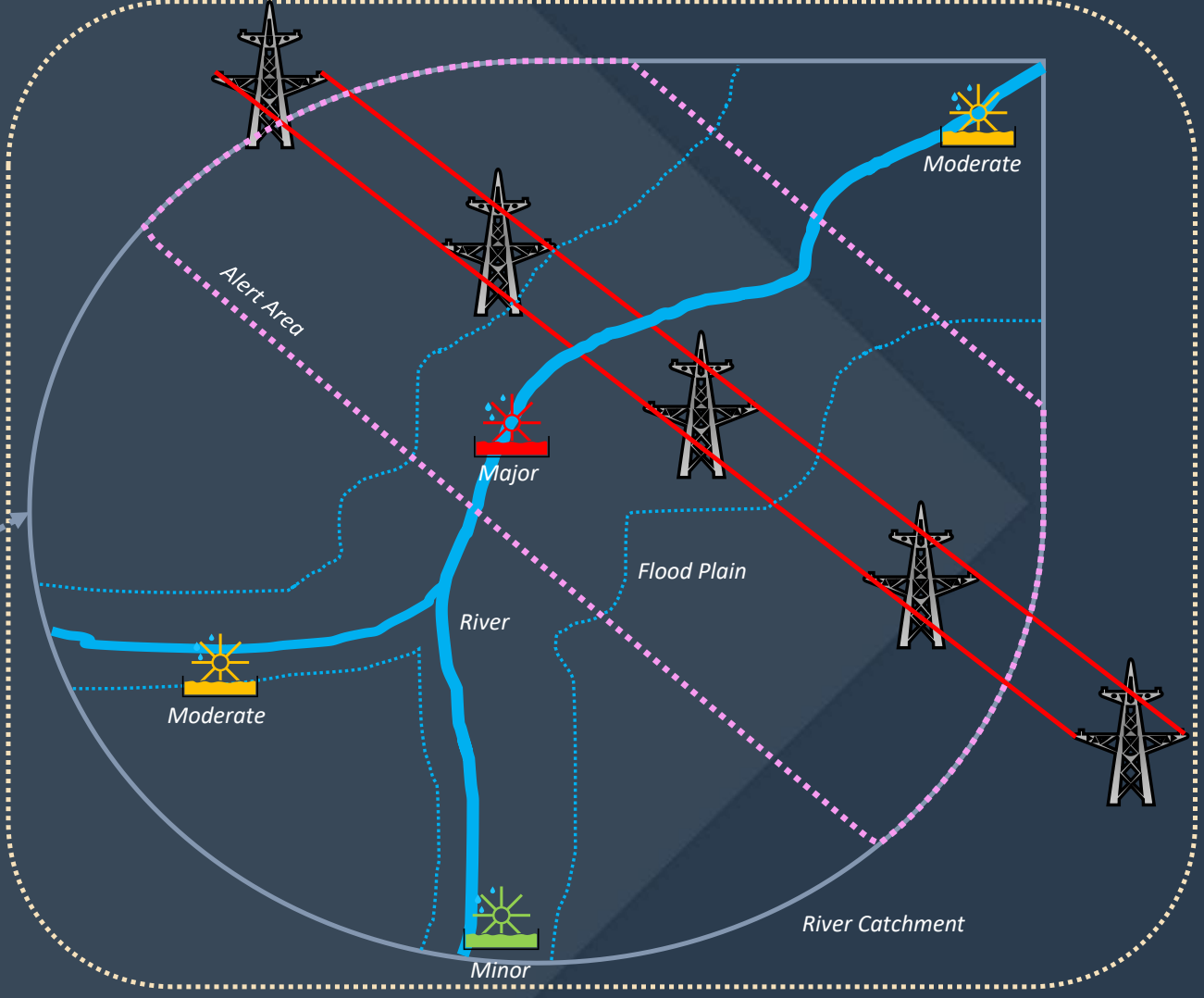
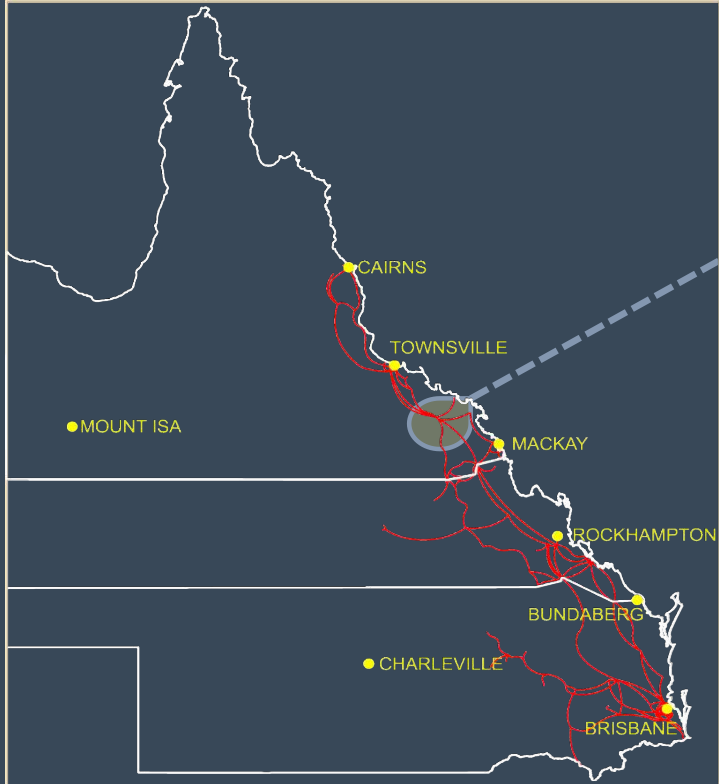
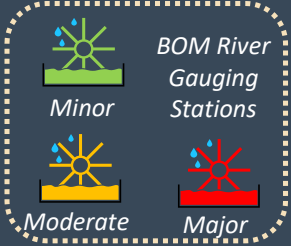
Wind Areas

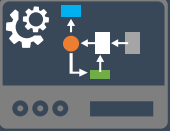
Asset Wind Rating Analysis with Wind Areas

BOM Responsible Area

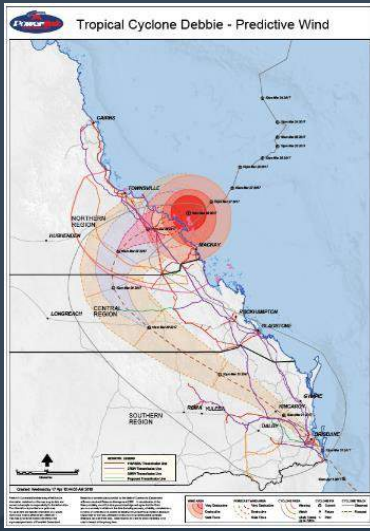
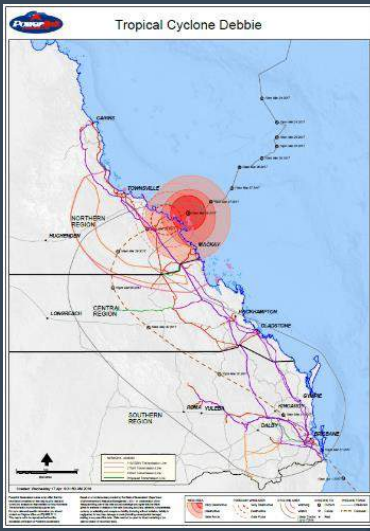
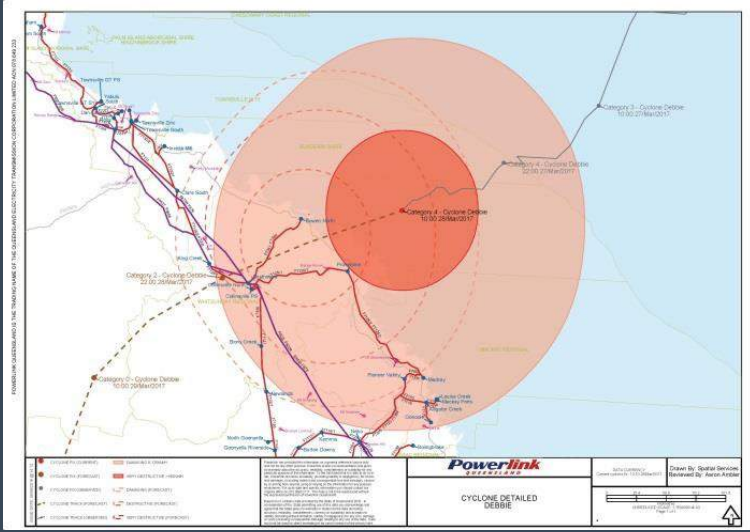
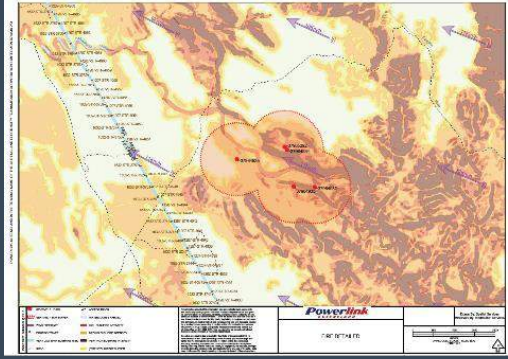
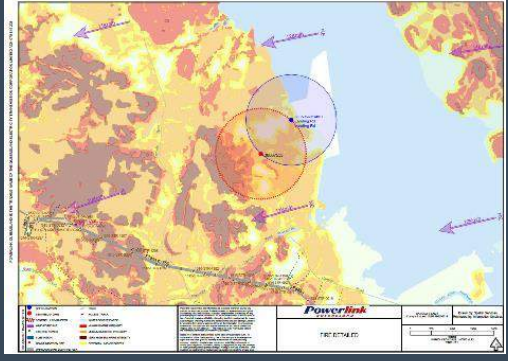
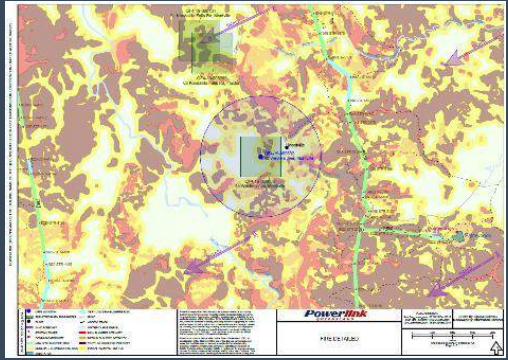
FIJI Responsible Area

Flood Workflows

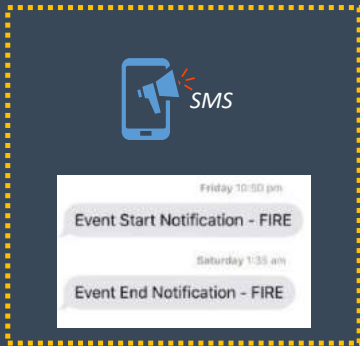
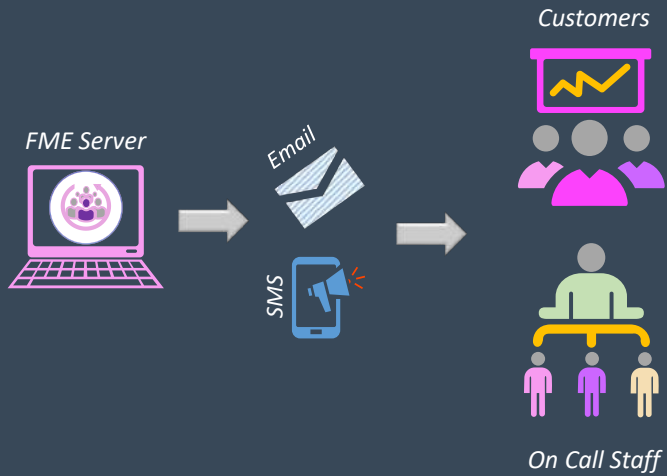




Mapping Products



Notifications



Email



FIRE DANGER ALERT

Please be advised that as at: 6:01 PM, Thursday 30 August 2018

A Fire Danger Rating of either: SEVERE, EXTREME or CATASTROPHIC has been reached in the Fire Districts below:

Click [here](#) to view the current Fire Danger Overview Map.

| District | Friday 31 Aug | Saturday 1 Sep | Sunday 2 Sep | Monday 3 Sep |
|-------------------|---------------|----------------|--------------|--------------|
| Marron and Warega | Severe | High | Low-Moderate | Low-Moderate |

EVENT START NOTIFICATION

Please be advised that a: FIRE event is now current.

FIRE ALERT

Please be advised that as at: 11:14 AM, Friday 12 April 2019

Sentinel Hotspot/s <=12hrs age and/or QRFS location/s of interest have been detected within close proximity to the following Powerlink Assets:

Click [here](#) to view the current network overview fire mapping.

Click [here](#) to view the current detailed fire mapping.

Powerlink assets at risk are also highlighted in Smart Client under the 'Fire Impact' layer.

Note: If webpage has not updated with current mapping press F5 or scroll down to see additional pages.

QRFS Details:

| QRFS Incident ID | Location | Land Use | Fire Status | Fire Details |
|------------------|------------------------|---------------------------|-------------|--|
| QF6-19-038761 | 9-51 Bands Rd, Goolman | Grazing native vegetation | Going | There is a vegetation fire at this location. Smoke may affect residents and motorists in the area. Residents should close their doors and windows and keep medication close by if suffering from a respiratory condition. Motorists should use caution and drive to conditions. If you believe your property is under threat, you should call Triple Zero (000) immediately. |

FEEDER Assets:

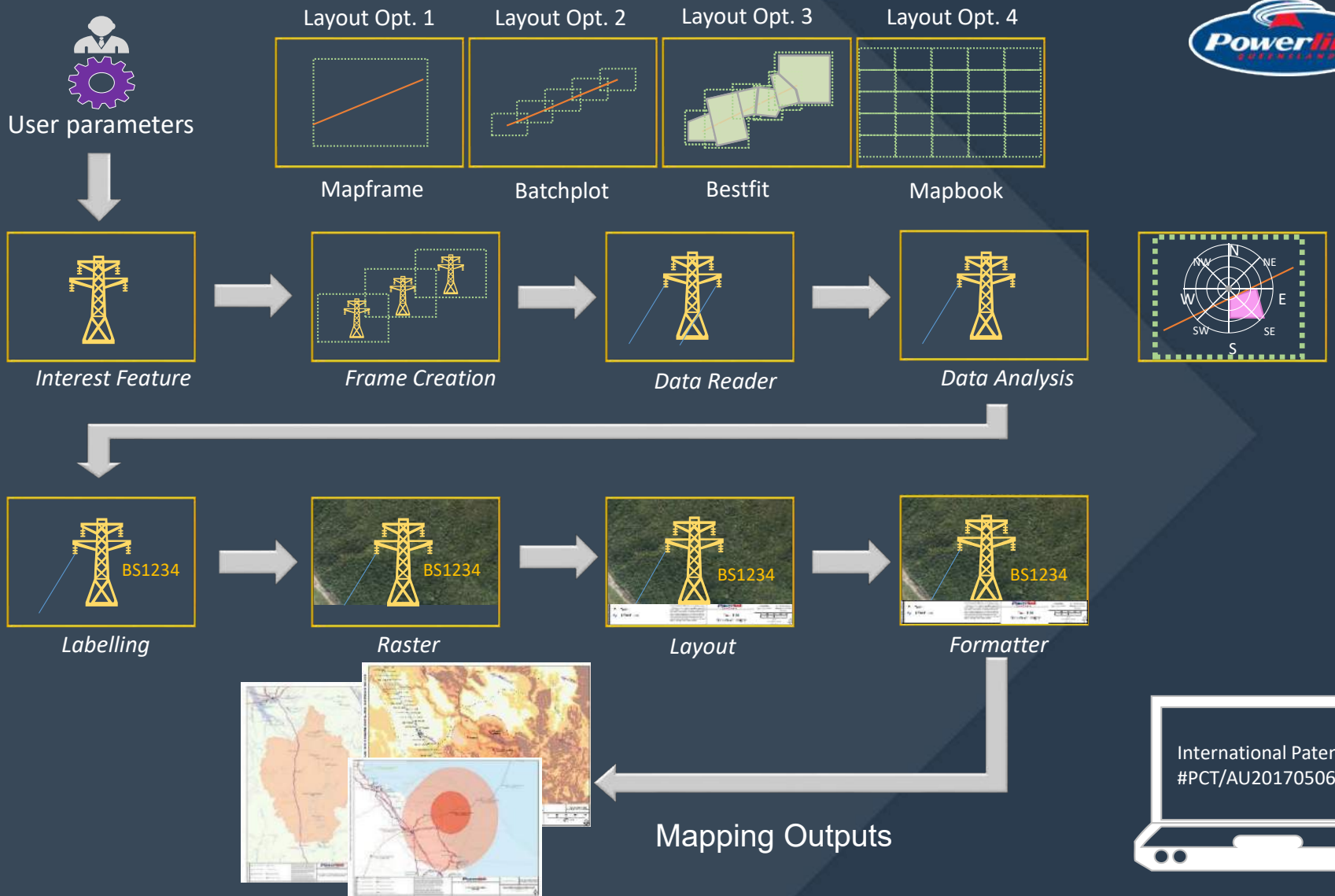
Note: 'Distance to Asset' measurement is from the outer buffer of the sentinel to the Asset. In the absence of Sentinel data the measurement is from the QRFS placemark to the asset.

| Feeder | Built Section | Circuits | Voltage | Region | Bushfire Rating - 20190412 | Bushfire Prone Area | PQ Risk Level | Sentinel Confidence | Sentinel Power | Sentinel Age | Sentinel ID | Distance to Asset (m) | QRFS Nearby | Permitted Burn Nearby | Gas Well within Sentinel Buffer |
|---|---------------|----------|---------|----------|----------------------------|-------------------------------------|---------------|---------------------|----------------|--------------|-------------|-----------------------|----------------------------|-----------------------|---------------------------------|
| F3848, F3849 - H014 Middle Ridge, S003 Greenbank. | 1479 | 2 | 275kV | Southern | Low-Moderate | Medium Potential Bushfire Intensity | Low | - | - | - | - | 726 | Yes - Going. QF6-19-038761 | Yes - QF6-19-038709 | - |

EVENT END NOTIFICATION

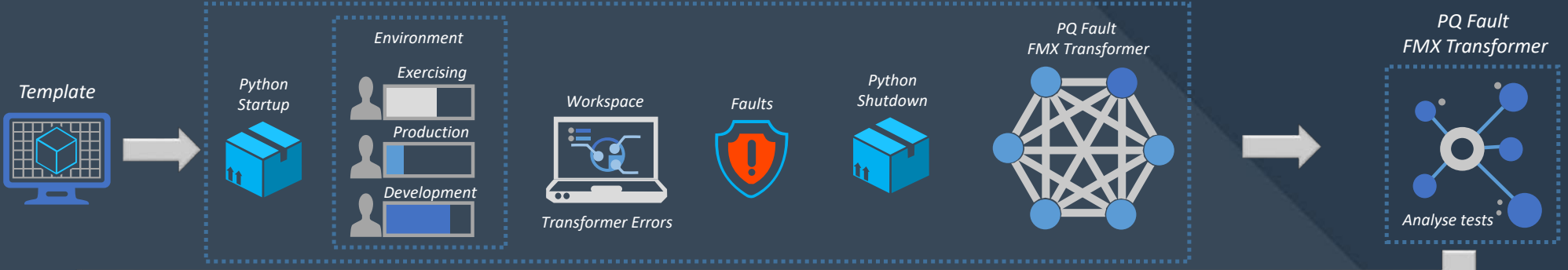
Please be advised that the: FIRE event is now over.

Automation of Mapping



FME Fault Notifications

Contained within workspace



Compile Faults to fault log



Service Now



SMS



Checklist Failure log



Notify On call personnel Based on roster table



Rectification of faults

```

This request has been automatically generated.

Fault/s have been encountered on Sentinel_hotspot_load.fmw - resolution required by Friday 12 Apr 9:28:31 PM 2019

Fault Type: ERROR
Log Message: Extracted from Log File
https://pqrvm04/fmeserver/#/job/361262/summary
Error Message: WFS Couldn't connect to server Unable to fetch the capabilities document https://sentinel.secure.ga.gov/au/443/geoserver/wfs/SERVICE/WFS/REQUEST/GetCapabilities/VERSION/1.1.1 A fatal error has occurred Check the logfile above for details.HTTP FTP transfer error Couldn't connect to server No proxy settings have been entered If you require a proxy to access external URLs please ensure the appropriate information has been entered.Please ensure that your network connection is properly set up.SENTINEL DATA SOURCE LOOPER Terminator Termination Message Translation Terminated ,SENTINEL DATA SOURCE LOOPER Terminator TestFactory SENTINEL DATA SOURCE LOOPER Terminator Termination Message Translation Terminated ,The below feature caused the translation to be terminated
Remediation Action: Check Error messages extract from Log file Fault Currency: Friday 12 Apr 11:28:31 AM 2019 Resolution Time: Friday 12 Apr 9:28:31 PM 2019

SNaP Tags:
service: TIS
category: fault
projectnumber: Emergency
Subject: FAULT_ID:9 on Sentinel_hotspot_load.fmw - ERROR - Resolution Required by 12/04/2019 21:28:31
assign: rlanes
user: aambler
priority: 2
date: 12/04/2019 21:28:31
jobtype: incident
    
```

FAULT Fault identified on BoM_TC_download_Combined.fmw. Fault Message - FME Server job failed. Remediation Strategy: Check Workspace used on FME Server. Fault Currency - Thursday 14 Feb 10:03:36 AM 2019. A SNaP ticket has been raised on behalf of Aaron Ambler and assigned to Kyle Morris to coordinate a resolution by Thursday 14 Feb 4:03:36 PM 2019.



State of Readiness



Scheduled Check



Annual
Monthly
Weekly
Daily

Manual



SQL



FME Workflow



Service Now



Actioned by Staff



Determine
Success/Failure



Log Analysis results



Analyse Logs



Faults



CHECKLIST FAULT LIST

Please be advised that on: Sunday 14 Apr 3:30 PM 2019

The following CHECKLIST Items (1) failed and have been added to the Fault Message Log:

| CheckList ID | CheckList Item | Description | Method | Criticality | Event Type | Event Status |
|--------------|---|---|--------|-------------|------------|--------------|
| 57 | Are there unresolved faults in FAULT_MESSAGE_LOG? | Check the FAULT_MESSAGE_LOG to see if there are any unresolved faults | SQL | High | General | Active Error |

Any queries or concerns please contact TIS Emergency Coordinator on: 07

Kind regards,

TIS Team
Powerlink Queensland

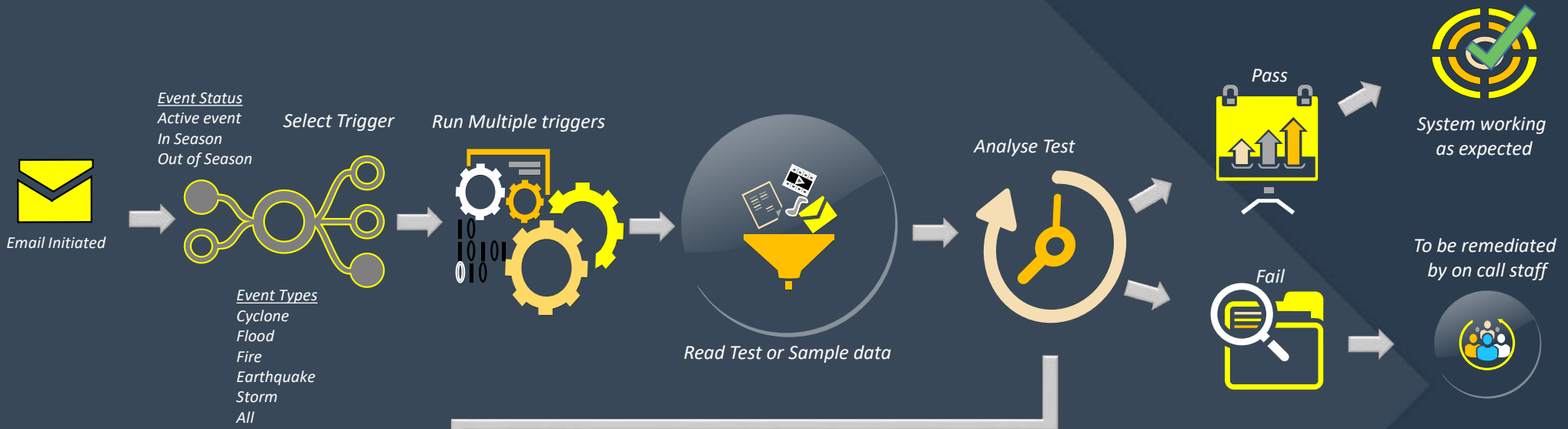
| TIS STATE OF READINESS | | | |
|--|---------------|---------------------|---------------------|
| Sunday 14 Apr 3:30 PM 2019 | | | |
| <i>Note: Check List Faults will be sent to the FAULT_MESSAGE_LOG</i> | | | |
| SEASON OVERVIEW | In Event: 10% | In Season: 10% | Outside Season: 50% |
| IN EVENT OVERVIEW | | IN EVENT BREAKDOWN | |
| Event Type | Readiness | Criticality | Readiness Breakdown |
| FIRE | 100% | High | 100% |
| | | Medium | 100% |
| | | Low | 100% |
| IN SEASON OVERVIEW | | IN SEASON BREAKDOWN | |
| Event Type | Readiness | Criticality | Readiness Breakdown |
| CYCLONE | 100% | High | 100% |
| | | Medium | 100% |
| | | Low | 100% |
| Event Type | Readiness | Criticality | Readiness Breakdown |
| FLOOD | 100% | High | 100% |
| | | Medium | 100% |



Analysis results

| ##### TIS STATE OF READINESS - CHECK COUNTS & PERCENTAGES ##### | | | | | | |
|---|-------------|-----------|----------|--------------------|---------------------|--------------------------|
| Checked: Sunday 14 Apr 3:30 PM 2019 | | | | | | |
| <i>Note: Faults will be sent to the FAULT_MESSAGE_LOG</i> | | | | | | |
| The following table shows the State of Readiness by Criticality and Season: | | | | | | |
| Criticality | Total Items | Passed | Failed | In Event Readiness | In Season Readiness | Outside Season Readiness |
| High | 4 | 3 | 1 | 75% | 100% | 50% |
| Medium | 11 | 11 | 0 | 100% | 100% | 100% |
| Low | 1 | 0 | 1 | 0% | 100% | 100% |
| Total Count & Readiness | 16 | 14 | 2 | 100% | 100% | 80% |
| The following table shows the State of Readiness for the Event Type: CYCLONE | | | | | | |
| Criticality | Total Items | Passed | Failed | In Event Readiness | In Season Readiness | Outside Season Readiness |
| High | 1 | 1 | 0 | 100% | 100% | 100% |
| Medium | 0 | 0 | 0 | 100% | 100% | 100% |
| Low | 1 | 1 | 0 | 100% | 100% | 100% |
| Total Count & Readiness | 2 | 2 | 0 | 100% | 100% | 100% |
| The following table shows the State of Readiness for the Event Type: FLOOD | | | | | | |
| Criticality | Total Items | Passed | Failed | In Event Readiness | In Season Readiness | Outside Season Readiness |
| High | 1 | 1 | 0 | 100% | 100% | 100% |
| Medium | 1 | 1 | 0 | 100% | 100% | 100% |
| Low | 0 | 0 | 0 | 100% | 100% | 100% |
| Total Count & Readiness | 2 | 2 | 0 | 100% | 100% | 100% |
| The following table shows the State of Readiness for the Event Type: FIRE | | | | | | |
| Criticality | Total Items | Passed | Failed | In Event Readiness | In Season Readiness | Outside Season Readiness |
| High | 1 | 1 | 0 | 100% | 100% | 100% |
| Medium | 0 | 0 | 0 | 100% | 100% | 100% |
| Low | 0 | 0 | 0 | 100% | 100% | 100% |
| Total Count & Readiness | 1 | 1 | 0 | 100% | 100% | 100% |

Exercising the System



| EMERGENCY EVENT FAULT TESTING | | | | | | | | | | | | | | | | | |
|--|---|-------------------|------------|------|--|--------|---------------------|------|---|------|--------------------------------|------|---------------------------------|------|------------------------------|------|----------------------------|
| Friday, 12 Apr 9:21 AM 2019 | | | | | | | | | | | | | | | | | |
| IN EVENT OVERVIEW | IN EVENT BREAKDOWN | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Event Type</th> <th>Percentage Passed</th> </tr> </thead> <tbody> <tr> <td>FLOOD</td> <td>100%</td> </tr> </tbody> </table> | Event Type | Percentage Passed | FLOOD | 100% | <table border="1"> <thead> <tr> <th>Result</th> <th>WorkOrder Run Order</th> </tr> </thead> <tbody> <tr> <td>PASS</td> <td>BoM_Cyclone_Status_Investigation_of_Storm_Height_Test</td> </tr> <tr> <td>PASS</td> <td>Flood_Status_Review_Test</td> </tr> <tr> <td>PASS</td> <td>Emergency_Response_Logging_Test</td> </tr> <tr> <td>PASS</td> <td>Coast_Emergency_PDF_Test</td> </tr> <tr> <td>PASS</td> <td>Flooding_Detailed_AOM_Test</td> </tr> </tbody> </table> | Result | WorkOrder Run Order | PASS | BoM_Cyclone_Status_Investigation_of_Storm_Height_Test | PASS | Flood_Status_Review_Test | PASS | Emergency_Response_Logging_Test | PASS | Coast_Emergency_PDF_Test | PASS | Flooding_Detailed_AOM_Test |
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| FLOOD | 100% | | | | | | | | | | | | | | | | |
| Result | WorkOrder Run Order | | | | | | | | | | | | | | | | |
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| EARTHQUAKE | 100% | | | | | | | | | | | | | | | | |
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| PASS | Earthquake_Detailed_AOM_Test | | | | | | | | | | | | | | | | |
| <p>Any queries or concerns please contact TIS Emergency Coordinator on: []</p> <p>Kind regards,</p> <p>TIS Team Powerlink Queensland</p> | | | | | | | | | | | | | | | | | |



In Summary

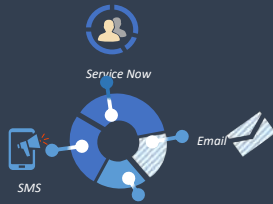


FME Server

Average 2,500 jobs/day

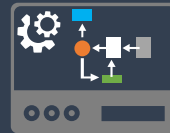
Max 3,500 jobs/day addition due to emergency event

Emergency Workflows = 50% of scheduled load



Notifications sent

3,500 past year



Mapping Products

8,000 past year



Faults

900 past year

Questions

