



WORLD TOUR  
2018

**FME at NCTIR**

Hamish Kingsbury





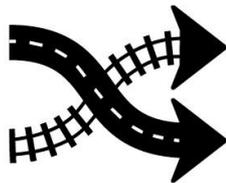
# FLIGHT PLAN

- About NCTIR
- Fulcrum Integration
- Trigger Action Response Plan
- 3D Slips



# NCTIR

NORTH CANTERBURY TRANSPORT  
INFRASTRUCTURE RECOVERY  
*RECONNECTING COMMUNITIES*



# About us

- Four full time, three part time staff
- Work with:
  - Planners
  - Designers
  - Engineers
  - Environmental Scientists
  - Business Systems
  - ...
  - And more!

aurecon

abley

JACOBS®

ORBICA

LOCATION.  
DATA.  
CONNECTIVITY.





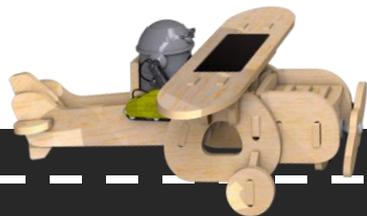
three.js



Chart.js



fulcrum





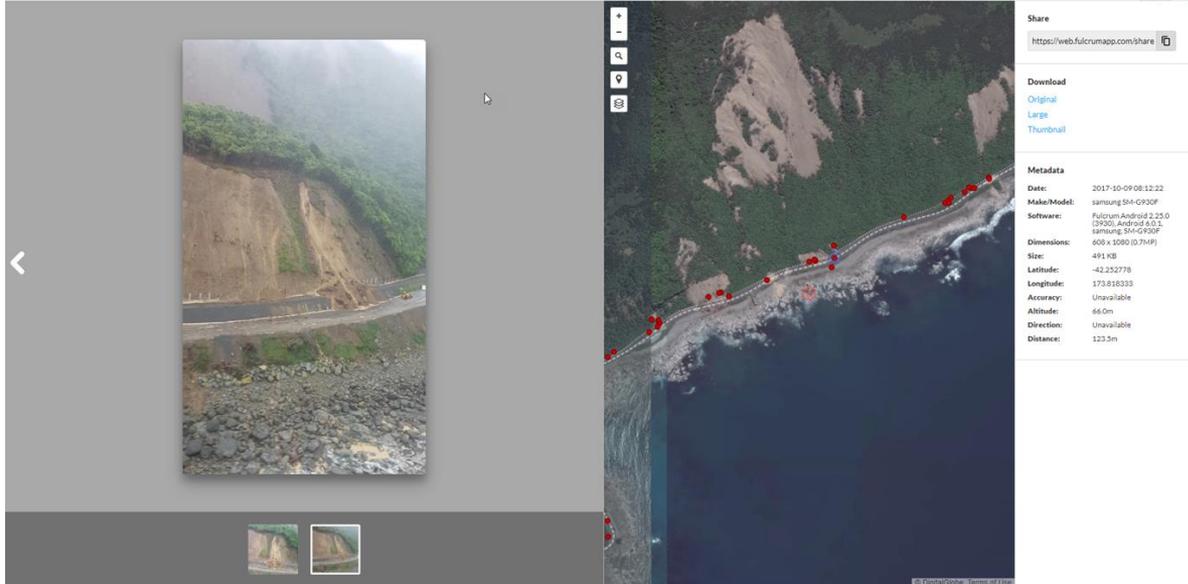
# Fulcrum

Integrating Fulcrum forms into NCTIR systems



# Fulcrum

Captured by Frances Neeson near State Highway 1 yesterday

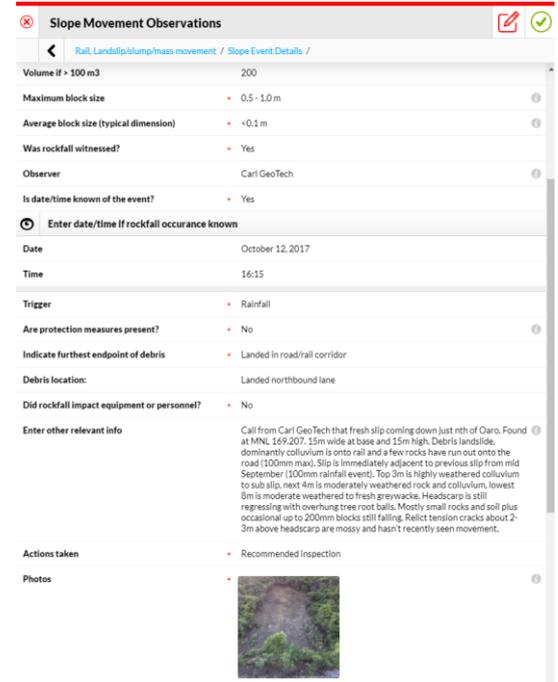


The screenshot displays the Fulcrum mobile application interface. On the left, a vertical photo shows a landslide on a hillside. On the right, a satellite map shows the same location with several red circular markers indicating the extent of the landslide. Below the main view are two smaller thumbnail images. On the far right, a metadata panel provides details about the capture.

**Share**  
https://web.fulcrumapp.com/share

**Download**  
[Original](#)  
[Large](#)  
[Thumbnail](#)

**Metadata**  
Date: 2017-10-09 08:12:22  
Make/Model: samsung SM-G930F  
Software: Fulcrum Android 2.22.0 (3920), Android 6.0.1, samsung SM-G930F  
Dimensions: 608 x 1080 (0.74x)  
Size: 491 KB  
Latitude: -42.252778  
Longitude: 173.818333  
Accuracy: Unavailable  
Altitude: 66.0m  
Direction: Unavailable  
Distance: 123.5m



The screenshot shows the 'Slope Movement Observations' data entry form. It includes fields for volume, block sizes, observer, date, time, trigger, and protection measures. A detailed text field contains a report from Carl GeoTech describing a landslide event on a road.

**Slope Movement Observations**

Volume if > 100 m3: 200

Maximum block size: 0.5 - 1.0 m

Average block size (typical dimension): <0.1 m

Was rockfall witnessed?: Yes

Observer: Carl GeoTech

Is date/time known of the event?: Yes

**Enter date/time if rockfall occurrence known**

Date: October 12, 2017

Time: 16:15

Trigger: Rainfall

Are protection measures present?: No

Indicate furthest endpoint of debris: Landed in road/rail corridor

Debris location: Landed northbound lane

Did rockfall impact equipment or personnel?: No

**Enter other relevant info**  
Call from Carl GeoTech that fresh slip coming down just nth of Oaro. Found at MNL 169.207. 15m wide at base and 15m high. Debris landslide, dominantly colluvium is onto rail and a few rocks have run out onto the road (100mm max). Slip is immediately adjacent to previous slip from mid September (100mm rainfall event). Top 3m is highly weathered colluvium to sub-slip, next 4m is moderately weathered rock and colluvium, lowest 6m is moderate weathered to fresh greywacke. Headscarp is still regressing with overhanging tree root balls. Mostly small rocks and soil plus occasional up to 200mm blocks still falling. Reflect tension cracks about 2-3m above headscarp are mossy and hasn't recently seen movement.

**Actions taken**  
Recommended inspection

**Photos**  



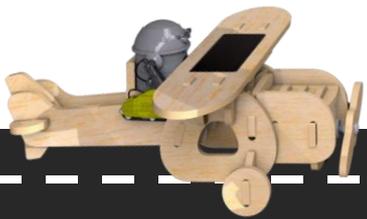
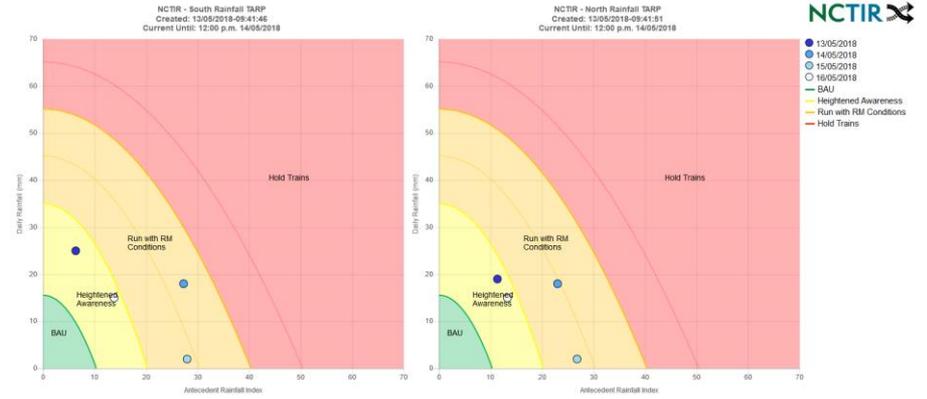
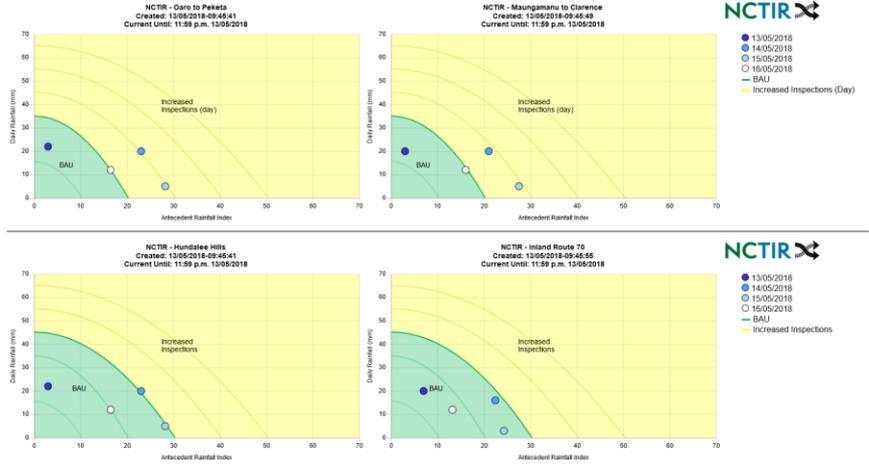

# Trigger Action Response Plan (TARP)

Decision making for Road and Rail opening



# TARP

Day 1



# 3D Slips

Using high resolution imagery and LIDAR



# THE PROCESS IS **EASY** ....ish



**Get the data**

LIDAR and Imagery



**Process the data**

FME Server



**Store the data**

IIS



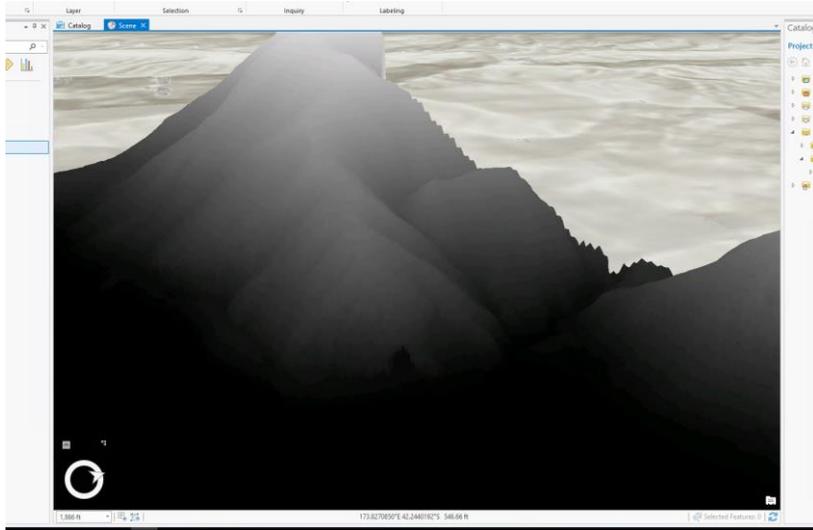
**Show the data!**

Three.JS

**Dmitri Bagh:**

<https://www.safe.com/presentation/fme-and-threejs-equals-freedom-to-fly>

# The Data and The Problem





ACCESSIBLE



FAST



NO EXTRA SOFTWARE



MOBILE





**The Solution:**

**A two pronged  
approach**



**There are a lot of slips!**



**Other areas of interest**

Place Point

Place Point

Point Buffer (m)

200

Distance to buffer around the point (max:750)

Scene Name

Name of Scene

Email

...@nctir.com

Optional - link will be emailed to you

Select Survey Time

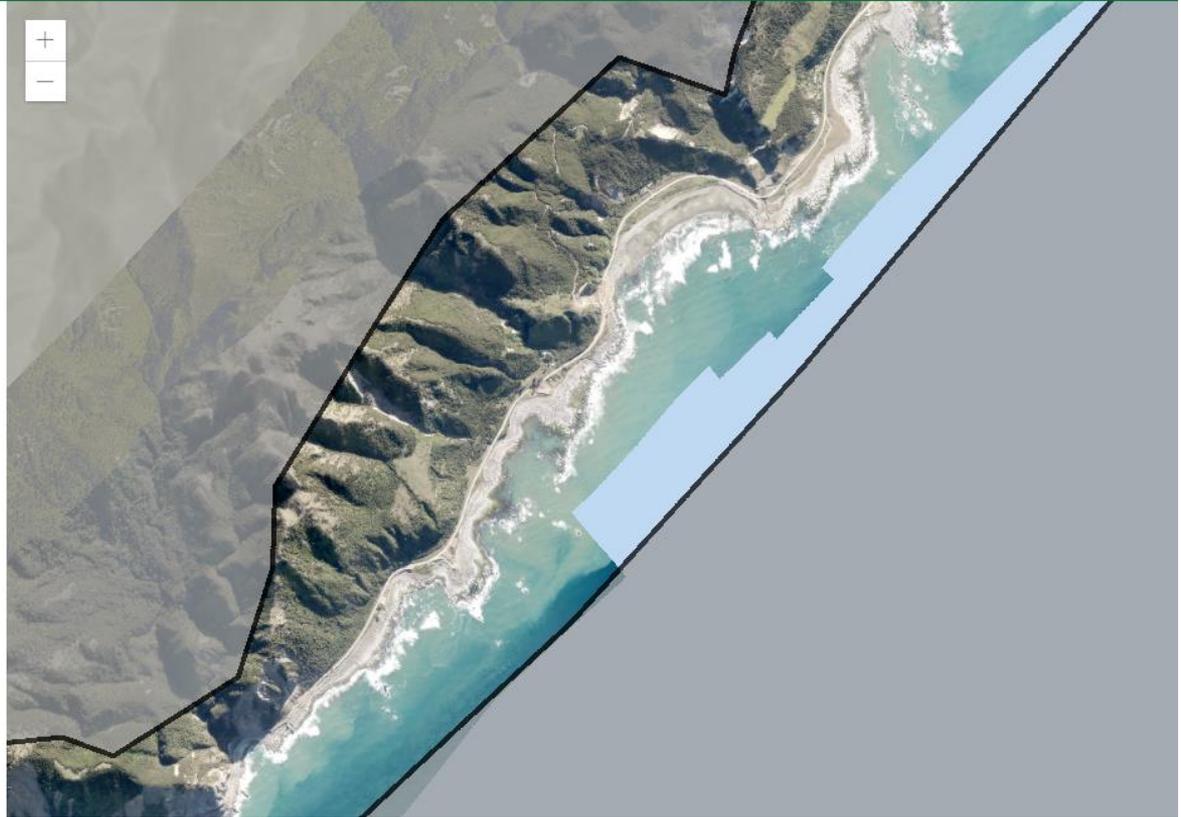
- December 2016
- May 2017

Estimated Time

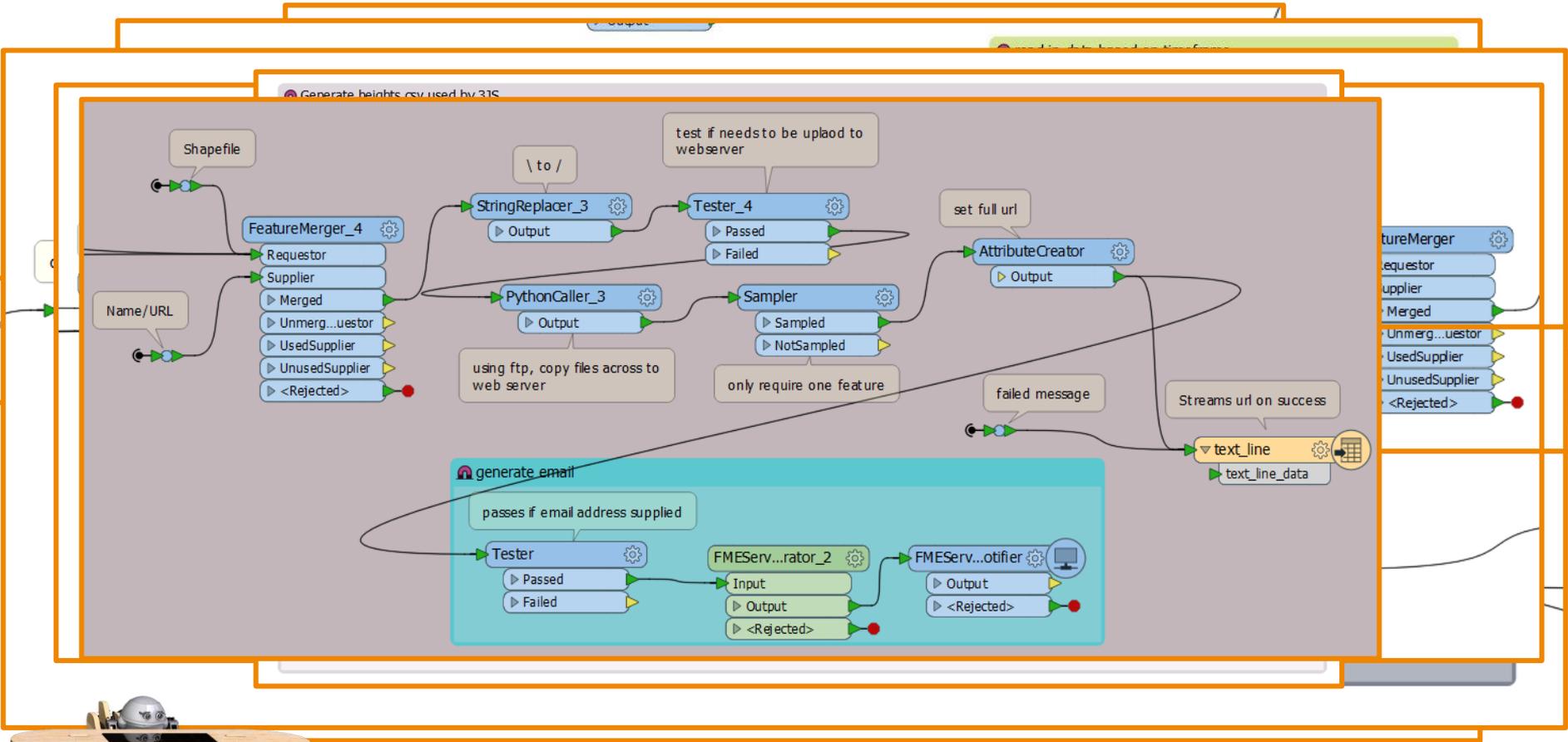
seconds

Generate Scene

Go!

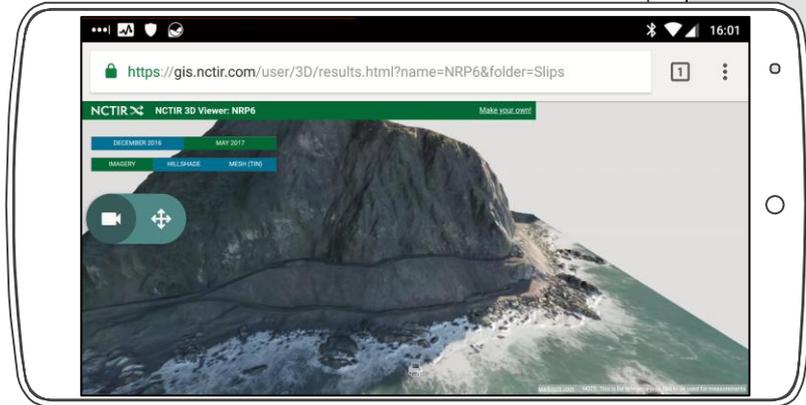
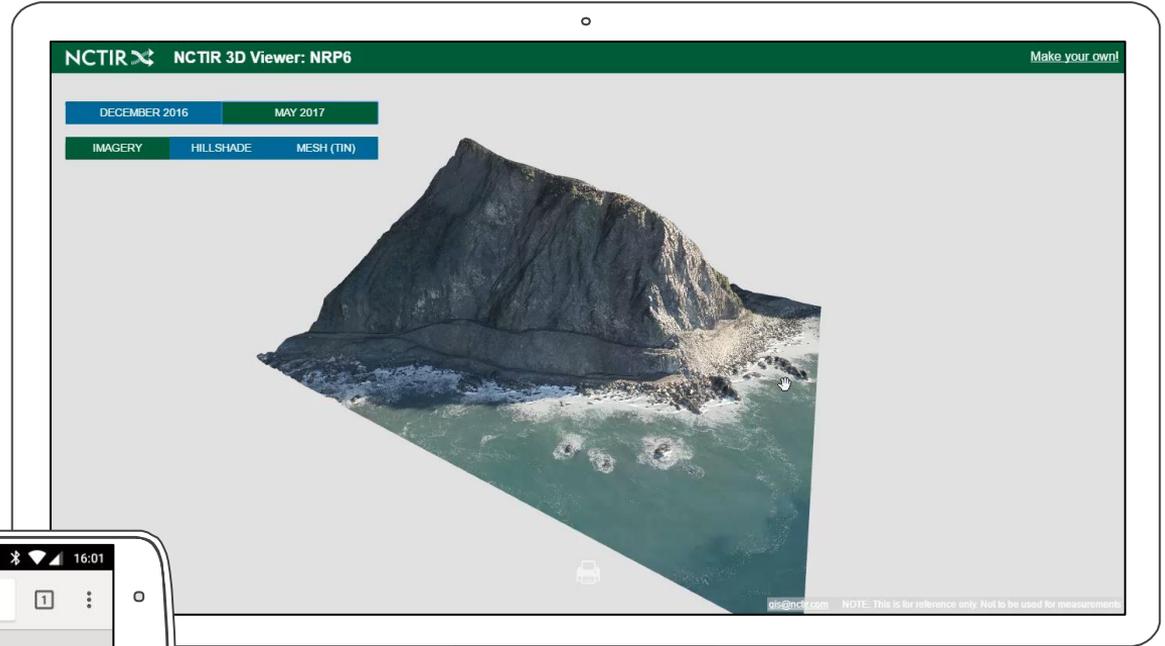


# Self Serve Portal



# FME Solution

# The Result





**THANK YOU!**

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Hamish Kingsbury  
hamish@abley.com