

# Project Status Assessment (IOCM)

Report Compiled by Patrick Funnell

13-September-2021

## Introduction

The key aims of the Construction Phase are to:

- Develop the product to be sufficiently stable and mature that it can be deployed in the user community for beta user acceptance testing.
- Demonstrate that all planned functionality has been developed by successfully passing alpha stage functional acceptance testing and key system quality scenario testing.
- Produce a user manual to support beta testing
- Develop test materials to support beta testing

Achievement of these aims is embodied in the deliverables of the Initial Operational Capability Milestone. IOCM is achieved by:

1. Developing and deploying 'beta ready' version of the final application that embodies:

*"feature complete, no known bugs".*

As a POC (proof of concept) project, there will be some known bugs given limited time for developing resources and conducting research.

The beta ready version of the application demonstrates that all intended functionality is complete and ready for end user acceptance testing to the best of the development team's knowledge.

1. Providing supporting test evidence to justify an assertion that IOCM has been achieved.
2. Preparing test materials to support beta testing and analyse the results.
3. Delivering an attractive and informative user manual to support beta testing and eventual production operation of the application by end users.

This report assesses current project progress against these outcomes. It also summarises progress and issues faced during each iteration of the Construction Phase.

## Quick personnel breakdown

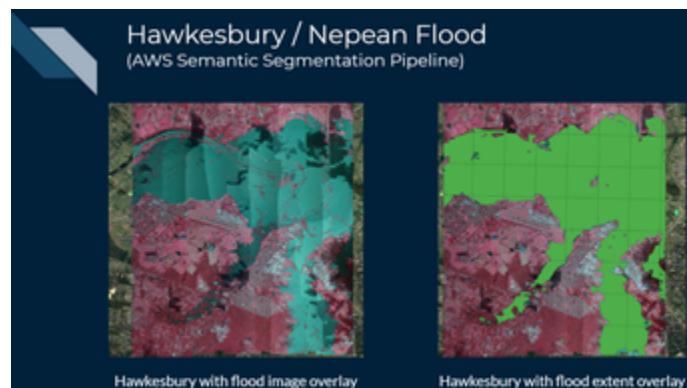
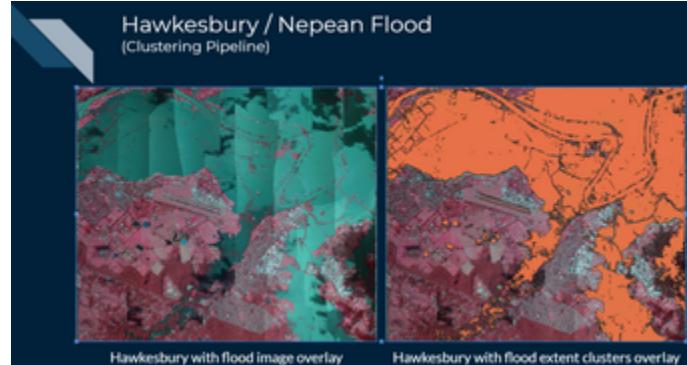
Patrick Funnell (Pat)	CSU	Internal project management and developer
Adam Blewitt	CSU	Developer
Darren Sheehan	CSU	Developer
Andrew Smith	CSU	Developer
Cameron Nyberg	CSU	Developer
David Tien	CSU Lecturer	Technical guidance and university requirements enforcer
Maria Jensen	DCS/Spatial services	Project manager
Nikzad Babaii	Intellify	Technical lead for the project, providing guidance and technical insight
Simon Reynolds	DCS/Spatial services	Manager Business Technology Services
Lars Hansen	DCS/Spatial services	Director Information Services

## Executive Summary

The project to date is progressing well, multiple semi-autonomous image processing pipelines have been constructed in which are now ready to conduct Beta UAT (user acceptance testing) on. There are two primary pipelines, the Clustering pipeline and the AWS Semantic Segmentation pipeline, there is a third one in the works that will take the majority of the Semantic Segmentation pipeline and apply a different more effective algorithm. Given it is just an algorithm change and the structure of the pipeline remains the same, the usage and structure can be tested against in the beta UAT process. Each pipeline comes with a user manual which the team hopes to refine based on user feedback and a feedback form in which to provide this feedback, these forms are still in the works and will be completed over the next few days after the submission of this document. The aim is to conduct the user testing next week to be able to have adequate time to make the necessary adjustments based on the user feedback. This feedback is to be completed by the relevant Spatial Services staff (to be confirmed with the stakeholders). Alpha UATs have been completed for both primary pipelines. Due to the nature of the project, being a POC (proof of concept) the alpha UATs contain both the

functional and non-functional requirements all together based on the high level requirements set out in DCS's high level requirement document. The presentation on 3-September-2021 was a big success and confirmed the direction that the team is headed, although there is some concern around scope creep. The results are promising, group 5 has provided good grounds for DCS/Spatial Services to continue with should they choose to further refine the product. The focus now is primarily refinement and cleanup with some partial exploration still be conducted by Nik (Intellify) and Andrew.

## Results

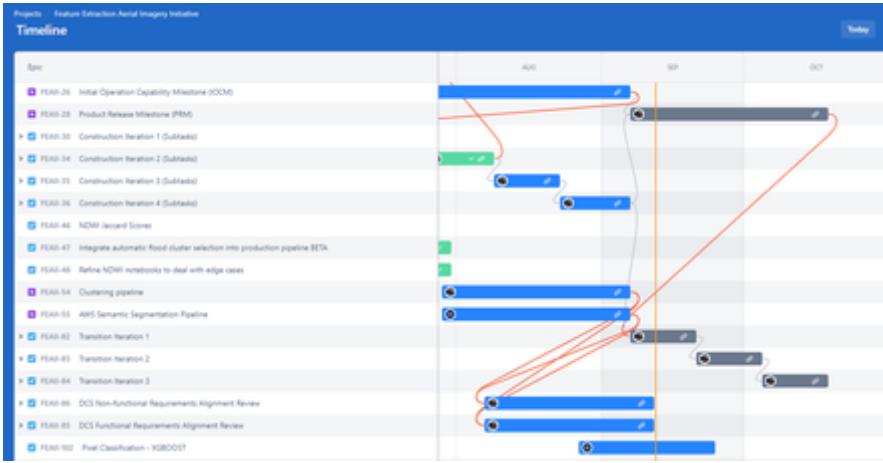


## Number of issues due per day September

Gadgets can only be viewed in browsers



## Timeline



## Key System Qualities and Functionality

Initial requirement analysis identified the following critical and significant system quality and functional requirements:

	Blocker	Critical	Major	Highest	High	Medium	Low	Lowest	Minor	Trivial
OLD	🚫	⬆️	✗	⬆️	⬆️	⬇️	⬇️	⬇️	✖️	⬇️
NEW	🚫	✗	✗	✗	✗	✗	✗	✗	✗	✗

## System Qualities

Key	Summary	T	P	Description
FEAI-72	DCS Non Func Req 1 - Data Storage	⬇️	==	Temporary files generated during running of the solution should be removed at the end of each run. The solution is not required to manage data retention of previously generated outputs.
FEAI-73	DCS NonFunc Req 2 - Data Validation - No automated tools	⬇️	↗️	We will check the format, projection, spatial accuracy and congruence with source imagery manually. After confidence is achieved in the method, a quick check will only be performed if required.
FEAI-74	DCS Non Func Req 3 - Data and User Access	⬇️	↗️	The system will be designed to be operated by a single user at a time. The solution does not require a graphical user interface, it may be via command line style execution. The user will already be authenticated in AWS to give access to use this tool. The system will not publish any APIs, web interfaces or the like either externally or internally within Spatial Services.
FEAI-75	DCS Non Func Req 5 - Usability	⬇️	==	The amount of human effort required to use the solution should be minimised. After this POC the developed system may be extended to be fully automated.
FEAI-76	DCS Non Func Req 4 - Auditing (Not required)	⬇️	▼	As a manually operated tool for this POC, auditing is not required.
FEAI-77	DCS Non Func Req 7 - Performance	⬇️	==	As the solution is designed to be used for rapid response environments, it should complete within hours, not days.
FEAI-78	DCS Non Func Req 8 - Supportability	⬇️	↗️	Documentation shall be provided on how to operate the system and troubleshoot common errors.
FEAI-79	DCS Non Func Req 9 - System Availability	⬇️	==	The solution will usually remain offline and will be started as needed when there is a flood. Documentation should include information on how to start the system. Should run on windows
FEAI-80	DCS Non Func Req 10 - Cost	⬇️	==	Consideration should be given to the cost to run the system.

9 issues

## Functional Requirements

Key	Summary	T	P	Description
FEAI-56	DCS Func Req 1 - Accept input of aerial images in ecw or JP2 (JPEG 2000) format.	☒	↗	High level requirements - Computer Vision POC Data Input Images will be in 3 band, RGB and 3 band false colour (Near Infrared, Red, Green)
FEAI-57	DCS Fun Req 2 - The data will be already orthorectified as GDA2020 MGA56 (Hawkesbury) and MGA55 (Brewarrina)	☒	↗	High level req - cv POC Data Input The data will be already orthorectified as GDA2020 MGA56 (Hawkesbury) and MGA55 (Brewarrina)
FEAI-58	DCS Func Req 3 - The solution will accept 1 or more aerial images in strip mosaic format. Tiled input for testing only	☒	↗	High level req - cv POC Data Input The solution will accept 1 or more aerial images in strip mosaic format. Tiled input for testing only
FEAI-59	DCS Func Req 4 - Aerial images to be read from Amazon s3	☒	↗	High level req - cv POC Data Input Aerial images to be read from Amazon s3
FEAI-60	DCS Func Req 5 - Configuration settings for general operation	☒	≡	High level req - cv POC Configuration Any settings required to operate the system (for example the location of the input s3 images) shall be configurable, either via a command line or configuration file.
FEAI-61	DCS Func Req 6 - Detect current boundaries from the Aerial Images	☒	↗	As determined in conjunction with the SES
FEAI-62	DCS Func Req 9 - Output flood extents as a polygon in ESRI shapefile format, or GDB (GeoDatabase)	☒	≡	High level req - cv POC Polygon outputs Output flood extents as a polygon in ESRI shapefile format, or GDB (GeoDatabase).
FEAI-63	DCS Func Req 10 - Output polygons to be georeferenced to the same level of alignment accuracy as the input images	☒	↗	High level req - cv POC Polygon outputs Output polygons to be georeferenced to the same level of alignment accuracy as the input images.
FEAI-64	DCS Func Req 7 - Output flood extent in the same resolution as the input images	☒	↗	One output raster per input raster.
FEAI-65	DCS Func Req 11 - Output polygons to be clean and minimally smoothed only to eliminate noise.	☒	≡	High level req - cv POC Polygon outputs Output polygons to be clean and minimally smoothed only to eliminate noise. E.g. with a main predominant floodline, rather than many small polygons of a few pixels each. Minimum polygon size for a patch of land to be 25 square meters.
FEAI-66	DCS Func Req 8 - Output flood extent rasters in the same file format as the input	☒	≡	Output flood extent rasters in the same file format as the input images.
FEAI-67	DCS Func Req 12 - It is preferable for the polygon output to be a single file with a continuous floodline, even where the flood line spans across input mosaics.	☒	▼	High level req - cv POC Polygon Outputs It is preferable for the polygon output to be a single file with a continuous floodline, even where the flood line spans across input mosaics.
FEAI-68	DCS Func Req 15 - Generated flood extent files are to be saved in Amazon S3	☒	↗	Generated flood extent files are to be saved in Amazon S3.
FEAI-69	DCS Func Req 13 - Polygon outputs to be closed polygons (i.e. the end of each polygon must join back to the start) Note: open polygon is a line not a polygon.	☒	≡	High level req - cv POC Polygon outputs Polygon outputs to be closed polygons (i.e. the end of each polygon must join back to the start) Note: open polygon is a line not a polygon.
FEAI-70	DCS Func Req 16 - Solution will report its level of confidence in the produced flood extent map.	☒	≡	Solution will report its level of confidence in the produced flood extent map.
FEAI-71	DCS Func Req 14 - Polygon outputs to contain only the flood extent	☒	↗	High level req - cv POC Polygon outputs Polygon outputs to contain only the flood extent, so that other software using the output can overlay the flood extent on top of other imagery and maps.

16 issues

## 1.Deliverables

### 1.1. Beta Ready Version of the Product

#### Git repo root folder

The screenshot shows a GitHub repository named 'Flood Extent Extraction'. The repository has a README file and several sub-directories: App/GMM Extraction Method, Documentation, Images, Logs, Models/GMM, Out, and gisimage. The commit history shows the following entries:

Date	Last commit	Message
3 days ago	Initial commit	Created file now saved to parent of output_directory
2021-08-08	Initial commit	Initial commit
2021-08-08	Initial commit	Initial commit
2021-08-08	Initial commit	Initial commit

**README.md**

**Flood Extent Extraction**

Collection of user-ready notebooks / apps for the extraction of flood extents from aerial imagery.

**Steps**

Basic steps to get up and running

- Start Development Notebook
- Run GMM Extraction Method
- Check app documentation for system setup
- Configure app
- Run

#### Clustering pipeline notebook

Status: **BETA UAT READY**

Access: DCS / Spatial Services, CSU Students

Source: <https://bitbucket.org/csu-spatialservices/flood-extent-extraction/src/main/App/GMM%20Extraction%20Method/>

Manual: [https://github.com/ablewitt/ITC303-Documents/blob/main/IOCM/Flood%20Extent%20Extraction%20Manual%20\(GMM%20Method\).pdf](https://github.com/ablewitt/ITC303-Documents/blob/main/IOCM/Flood%20Extent%20Extraction%20Manual%20(GMM%20Method).pdf)

The screenshot shows a GitHub repository named 'GMM Extraction Method'. It contains a single file, 'GMM\_Flood\_Extent\_Extraction.ipynb', which was committed 3 days ago. The commit message indicates it was created for AMI usage.

Date	Last commit	Message
3 days ago	Initial commit	Created file now saved to parent of output_directory

#### AWS Semantic Segmentation pipeline notebook

Status: **BETA UAT READY**

Access: DCS / Spatial Services, CSU Students

Source: <https://bitbucket.org/csu-spatialservices/flood-extent-extraction/src/ss-pipeline/App/SS%20Extraction%20Method/>

Manual: [https://github.com/ablewitt/ITC303-Documents/blob/main/IOCM/Flood%20Extent%20Extraction%20Manual%20\(SS%20Method\).pdf](https://github.com/ablewitt/ITC303-Documents/blob/main/IOCM/Flood%20Extent%20Extraction%20Manual%20(SS%20Method).pdf)

(in a subbranch [ss-pipeline], not part of the main production branch yet but still ready to run through the beta ready UAT process)

The screenshot shows a GitHub repository named 'SS Extraction Method'. It contains a single file, 'AWS\_Semantic\_Segmentation\_Pipeline.ipynb', which was committed 40 minutes ago. The commit message indicates it was added for SS Pipeline Notebooks.

Date	Last commit	Message
2021-08-08	40 minutes ago	Added SS Pipeline Notebooks

### 1.2. Supporting Test Evidence

<https://github.com/ablewitt/ITC303-Documents/blob/main/IOCM/UAT%20Alpha%20Testing.pdf>

# UAT Alpha Testing

Conducted by Patrick Funnell & Darren Sheehan

*[The Test Case ID should be unique. In addition, the name of each Test Case should reflect the intent of the test case, ideally expressed as a Boolean condition.]*

## KEY

**<Test Case ID> - <Test Case Name>:**

Description: [Describe the logical condition that the Test Case evaluates. Include the expected result.]

Pre-conditions: [List conditions that must be true before this Test Case can start.]

Post-conditions: [List conditions that should be true when this Test Case ends.]

Data required: [Identify the type of data required for this Test Case.]

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## Functional

Test Case FEAII-56 (JIRA) - Data Input (DCS Requirements - HLR)

**Sub case 1. Accept input of aerial images in ecw or JP2 (JPEG2000) format.**

<b>Description</b>	The system should accept JP2s with support for ecw as a backup, in which will be used to generate the flood extents and export to a shape file.
<b>Pre conditions</b>	Working ecw or JP2 files (can be tested by opening and manually confirming content is loading in a local file viewer, windows 10, MacOS, Linux. JP2s open fine but ecw may not be native to these systems)
<b>Post conditions</b>	Image data is loaded in the notebook and processed accordingly.
<b>Data required</b>	Image dataset

# Clustering Pipeline

Reviewer: Patrick, Darren

Notebook: TBC

Conducted in git branch: review\_pat

<https://bitbucket.org/csu-spatialservices/flood-extent-extraction/src/review-pat/>

Primary developer: Adam

Status: 80-90% Complete, some further follow up internally required.

Date completed: In progress

ID	Status	Description
FEAll-56	PASS	<p>Sub case 1. Accept input of aerial images in ecw or JP2 (JPEG2000) format.</p> <p>The clustering pipeline accepts JP2 images, ecw and JP2 are very similar in format. Ecw is a proprietary file type and has a similar file composition to JP2 although they have not been tested through this system. The clustering pipeline makes use of the NRG (near infrared) colour spectrum images in JP2 and as such it is recommended to use the JP2 file format with accompanying location and image data (infrared). (5-Sep-21)</p> <p><a href="#">Raster file formats—ArcGIS Pro   Documentation</a></p>

## 1.3. Beta Test materials

See deliverables section **1.1. Beta Ready Version of the Product**. The notebooks and manuals will be provided to DCS / Spatial Services for a beta test period along with the following feedback forms, they are not completed yet but will be a few days after the delivery of this document.

[Clustering Technique - Feedback \(Beta UAT\) - Google Forms](#)

[AWS Semantic Segmentation - Feedback \(Beta UAT\) - Google Forms](#)

## 1.4. User Manuals

See deliverables section **1.1. Beta Ready Version of the Product**.

### 2. Iterations

#### 2.1. Construction Iteration 1

**Note:** Not all jobs were assigned to Patrick Funnell, Jira assigns by default for notification and reporting purposes to the admin account.

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
FEAll-12	Finalise LCAM Project Plan		17/Jul/21 1:14 AM	27/Jul/21 8:31 AM	17/Jul/21	Patrick Funnell	Patrick Funnell		<span style="background-color: #90EE90; border: 1px solid #80E6AA; padding: 2px 5px;">DONE</span>	Done

1 issue

#### 2.2. Construction Iteration 2

**Note:** Not all jobs were assigned to Patrick Funnell, Jira assigns by default for notification and reporting purposes to the admin account.

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
FEAll-81	Requirement review and document		05/Aug	11/Aug	13/Aug	Patrick	Patrick			Unresolved

	adjusted based off feedback Pat / Maria	/21 9:45 AM	/21 10:41 AM	/21	Funnell	Funnell	<span style="background-color: #ADD8E6;">TO DO</span>	ed		
FEAI-53	PSR reporting due (June/July)		28/Jul/21 1:33 PM	01/Aug/21 4:38 AM	31/Jul/21	Patrick Funnell	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-52	Pat and Darren discussion regarding Jira and test plan / tests		28/Jul/21 1:29 PM	01/Aug/21 4:38 AM	30/Jul/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-51	The first results using AWS Semantic Segmentation (as provided in the previous emails) (Nik)		27/Jul/21 1:36 PM	11/Aug/21 11:03 AM	06/Aug/21	Andrew Smith	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-50	Finalise the clustering technique + Contour for all images (Nik)		27/Jul/21 1:32 PM	Thursday 12:21 PM	06/Aug/21	ablewitt	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-49	Create a pipeline to concatenate images (Nik)		27/Jul/21 1:24 PM	27/Jul/21 1:37 PM	06/Aug/21	Patrick Funnell	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #ADD8E6;">TO DO</span>	Unresolved
FEAI-44	Meeting scribe 4th August		26/Jul/21 1:38 PM	04/Aug/21 11:26 AM	04/Aug/21	Unassigned	Patrick Funnell	<span style="color: blue;">▽</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-43	Create Construction Iteration 2 Confluence Page		26/Jul/21 1:36 PM	02/Aug/21 10:54 AM	01/Aug/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-42	0.1_Flood_Extent_Extraction.ipynb   Todo tasks - Shapefile		26/Jul/21 1:32 PM	11/Aug/21 10:39 AM	04/Aug/21	ablewitt	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-41	Meeting scribe 28th July		26/Jul/21 1:27 PM	30/Jul/21 10:53 AM	28/Jul/21	Cam	Patrick Funnell	<span style="color: blue;">▽</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-40	Fix up Git, decide a method of working on the master files as well as making dev files available to all		26/Jul/21 1:22 PM	11/Aug/21 11:03 AM	28/Jul/21	Patrick Funnell	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-39	0.1_Flood_Extent_Extraction.ipynb   Todo tasks - Logging and error tracking		26/Jul/21 1:21 PM	11/Aug/21 10:40 AM	04/Aug/21	ablewitt	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-22	Email David regarding incorrect dates in schedule for project		20/Jul/21 2:45 AM	27/Jul/21 10:41 AM	27/Jul/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-11	Image Normalisation Investigation		16/Jul/21 11:16 AM	Tuesday 10:51 AM	23/Aug/21	Darren Sheehan	Patrick Funnell	<span style="color: red;">✗</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-10	Testing with RGB colour space		16/Jul/21 11:08 AM	01/Aug/21 4:05 AM	23/Jul/21	Cam	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done

15 issues

Clarification of task FEAI-49 is needed, to be discussed in a team meeting. Believed to be irrelevant due to full size image processing capabilities.

## 2.3. Construction Iteration 3

**Note:** Not all jobs were assigned to Patrick Funnell, Jira assigns by default for notification and reporting purposes to the admin account.

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
FEAI-96	Update PMAS, IOCM on wiki		11/Aug/21 11:31 AM	19/Aug/21 11:01 PM	22/Aug/21	Darren Sheehan	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done
FEAI-95	Compile iteration plan		11/Aug	16/Aug	22/Aug	Patrick	Patrick	<span style="color: orange;">=</span>	<span style="background-color: #C6F9E6;">DONE</span>	Done

			/21 11:15 AM	/21 10:29 AM	/21	Funnell	Funnell			
FEAI-94	Alpha phase UAT (Bug checking, etc - Internal)	[ ]	11/Aug/21 11:06 AM	Yesterday 9:07 AM	07/Sep/21	Patrick Funnell	Patrick Funnell	[=]	[DONE]	Done
FEAI-93	Finish off image annotations Darren	[ ]	11/Aug/21 11:01 AM	15/Aug/21 4:07 AM	22/Aug/21	Darren Sheehan	Patrick Funnell	[=]	[DONE]	Done
FEAI-92	Finish off image annotations Cam	[ ]	11/Aug/21 11:00 AM	05/Sep/21 2:40 AM	22/Aug/21	Cam	Patrick Funnell	[=]	[DONE]	Done
FEAI-91	Finish off Image annotations Pat	[ ]	11/Aug/21 11:00 AM	14/Aug/21 10:49 AM	22/Aug/21	Patrick Funnell	Patrick Funnell	[=]	[DONE]	Done
FEAI-90	A completed end to end working model for AWS semantic segmentation (For UAT purposes)	[ ]	11/Aug/21 10:51 AM	05/Sep/21 2:39 AM	22/Aug/21	Andrew Smith	Patrick Funnell	[=]	[DONE]	Done
FEAI-89	Masks completed (drawn based on JSON converter)	[ ]	11/Aug/21 10:50 AM	Yesterday 9:43 AM	22/Aug/21	Cam	Patrick Funnell	[=]	[DONE]	Done
FEAI-88	UAT GMM intro	[ ]	11/Aug/21 10:46 AM	05/Sep/21 2:40 AM	08/Sep/21	Patrick Funnell	Patrick Funnell	[=]	[IN PROGRESS]	Unresolved
FEAI-32	Test Model	[ ]	21/Jul/21 10:17 AM	Yesterday 9:07 AM	08/Sep/21	Patrick Funnell	Patrick Funnell	[=]	[IN PROGRESS]	Unresolved
FEAI-31	Beta Ready Implementation Model of the Final Application	[ ]	21/Jul/21 10:17 AM	Yesterday 9:43 AM	08/Sep/21	ablewitt	Patrick Funnell	[↗]	[DONE]	Done

11 issues

The majority of the jobs were completed in this iteration, the user acceptance testing has taken longer than expected due to the presentation that was apart of construction iteration 4. Still a few jobs from this iteration that will flow into the transition.

## 2.4. Construction Iteration 4

**Note:** Not all jobs were assigned to Patrick Funnell, Jira assigns by default for notification and reporting purposes to the admin account.

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
FEAI-99	Project presentation for DCS	[ ]	18/Aug/21 12:59 PM	05/Sep/21 2:40 AM	03/Sep/21	Patrick Funnell	Patrick Funnell	[↗]	[DONE]	Done
FEAI-97	PSR Reporting (August)	[ ]	14/Aug/21 10:50 AM	Yesterday 9:08 AM	11/Sep/21	Patrick Funnell	Patrick Funnell	[=]	[TODO]	Unresolved
FEAI-37	Project Status Assessment	[ ]	21/Jul/21 10:21 AM	Yesterday 9:08 AM	11/Sep/21	Patrick Funnell	Patrick Funnell	[=]	[IN PROGRESS]	Unresolved
FEAI-33	User Manual	[ ]	21/Jul/21 10:17 AM	Yesterday 9:08 AM	11/Sep/21	ablewitt	Patrick Funnell	[=]	[TODO]	Unresolved

4 issues

Still a few jobs from this iteration that will flow into the transition.

## 3.General Issues

### 3.1. Scope creep

Scope creep was a significant challenge over all iterations to date. Although given a set of semi fixed high level requirements, the requirement scope has moved and has continued to move throughout the project. Delays in initially starting the project and a lengthy time of undefined scope there has produced noise in the overall scope progression of the project. Intellify up until recently was aiming to build a fully refined solution, whereas Lars from Spatial Services (DCS) was interesting in the project operating as a proof of concept project. Not completely refined solution but rather one following research, testing and development for a few different algorithms. This confusion between teams, and overall lack of communication surrounding these issues lead to scope creep and too many pipelines being worked on. Group 5 made a big push to keep the number of active pipelines down, to only focus on a few that had high potential and low resource costs associated. Having these pipelines now in place with coordinated testing and development, the team could run through a UAT (user acceptance testing) session on both of our existing pipelines. Introduction of more AWS semantic segmentation algorithms did further add to this scope creep but has been rectified with some good development surrounding a modular pipeline in that space.

### 3.2. Resources

Lack of higher usage AWS tiered Sagemaker instances made development and testing in the AWS environment harder, the team worked locally to compensate. Usage of high level AWS resources was not allowed until recently due to the per hour cost, without them processing full sized image tiles wasn't a possibility. This has been resolved.

### 3.3. Risks

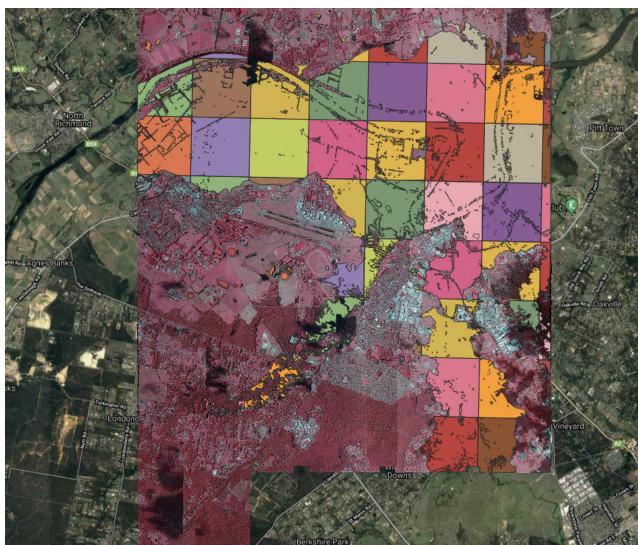
No major risks, small risks have been dealt with from time to time. They are primarily assessed during the PSR (project status report) work and weekly meetings (added to Jira), the August PSR has not yet been completed so the risk evaluation has not yet been completed. Below is a sample of previous PSR documents.

*June/July 2021 PSR*

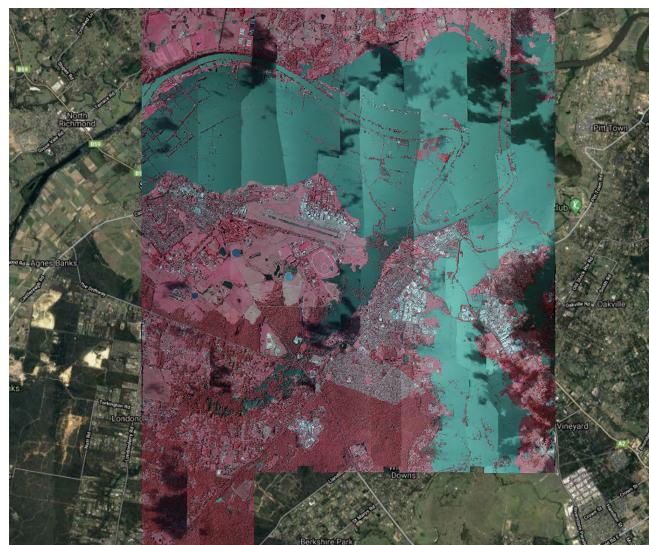
#### Project Status Report (June/July 2021)

GOVERNANCE		PARTICULARS		PROJECT INFORMATION			
Project Manager:	James Triggs  (Intellify:  Product and Delivery Lead)	Report date:	1/08/2021  (Month of focus: June/July)	Project ID:	DCS-CSU/Intellify	Description:	CSU students will continue to be mentored by Intellify and assisted to build machine learning models that can aid in the rapid response or recovery from floods. Early level success has been seen in the work with the Jupyter notebooks on AWS (flood detection in a small set of a few images)
Sponsor:	Lars Hansen  (Spatial Services:  Info Services Director)	% Complete	50%  (Time period and development /production status)	Project name:	CSU/Intellify	Work status:	The second session for the student team has commenced. Internal documents have been largely finalised. Work items are focused on evaluating accuracy of tested methods, generation of shapefile objects, BETA pipelines, and completion of image annotations for machine learning model.
<b>UPDATES</b>							
Status indicators:	OVERALL STATUS  	SCHEDULE  	SCOPE  	RESOURCES  	STAKEHOLDERS  		As requested, shapefiles demonstrating our work progress are provided with this PSR for stakeholder assessment.
	Project is tracking along well and students have been under the guidance of Intellify. June was very quiet, with small amounts of work being conducted by each team member, the same goes for the first half of July, from 12th July onwards production has ramped back up. Currently there are no identified blockers regarding resources or information.	From a CSU student perspective the schedule  is on track (more information can be provided on this soon (working to complete a Jira timeline). Back from the break now (all of June) with a timeline and schedule being pieced together to get the two main pipelines completed to a high level of quality. At the moment there is no concern of not completing the project before the end of the next CSU session (October '21).	Project methodology has been split into 2 streams of development / research. Gaussian Mixture Model (GMM) and Semantic Segmentation SS. GMM is the teams benchmark and performs well but not perfect. SS hopes to solve some of these issues.  Scope is being more closely aligned to a high level requirements document that was sent out by Maria to Pat and distributed to the team.	An upgrade of the BitBucket repository was requested by the students as we reached the maximum limit of repository commits and could no longer add new work items. This request was accommodated. The team also inquired about access to pre-flood aerial images of the same area as the provided datasets. Access to such data was provided through the Spatial Services HAPE viewer.  The team is experimenting with pre-trained Gaussian Mixture Models and their ability to make generalised predictions for new data. If an acceptable level of accuracy can be reached, this may save DCS significant costs in their deployment environment as this would negate the need to train a GMM for each new dataset.			

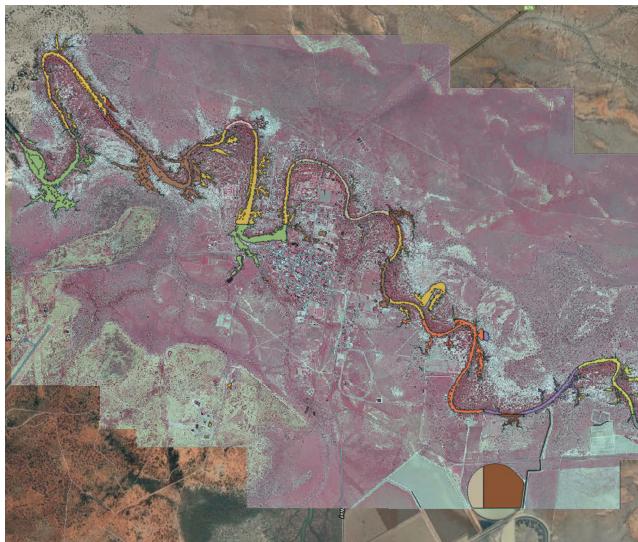
<b>Executive update:</b>	<p>CSU team has resumed studies after their mid year break. Through the period students worked lightly on image annotation for machine learning (ML), NDWI methods for flood identification and investigation to better project management methods (Jira / Confluence).</p> <p>Students have adopted Jira / Confluence for Project Management, research documentation, process documentation and knowledge bases. All students, Intelify and DCS stakeholders have been invited to the platform. For additional access email Patrick <a href="mailto:patrickfennell@outlook.com">patrickfennell@outlook.com</a></p> <p>As of resuming studies student have developed a complete end to end solution that takes raw flood images / tiles and generates shape file for consumption via GIS. The solution is not perfect however displays the current best methods and process to take an image and produce the required end product. Example images below.</p>
<b>ACTIVITIES</b>	
<b>Last month:</b>	
<b>Last month:</b>	<p>Weekly workshops with Nikzad Babaii on image segmentation using OpenCV as well as individual research and experimentation on:</p> <ul style="list-style-type: none"> <li>• K-means clustering</li> <li>• Gaussian Mixture Model</li> <li>• Normalized Difference Water Index (NDWI)</li> <li>• Image Color Space Normalisation</li> <li>• Shapefile generation</li> <li>• Hybrid approaches</li> </ul>
<b>Next month:</b>	<p>Continued manual annotation of Hawkesbury-Nepean &amp; Brewarrina datasets for AWS Semantic Segmentation Model, approximately 50% complete.</p> <p>Part of the CSU team will split off to pursue the feasibility of Semantic Segmentation. The results of this are hoped to fix some of the shortcomings of the Gaussian Mixture Model (false positives in built up areas and missing sections due to unexpected flood colour / shading). Further improvements are also made to polygon rendering in shape files. Currently polygons are complete, further development will allow holes and donuts to account for islands and other elements above the flood level.</p>



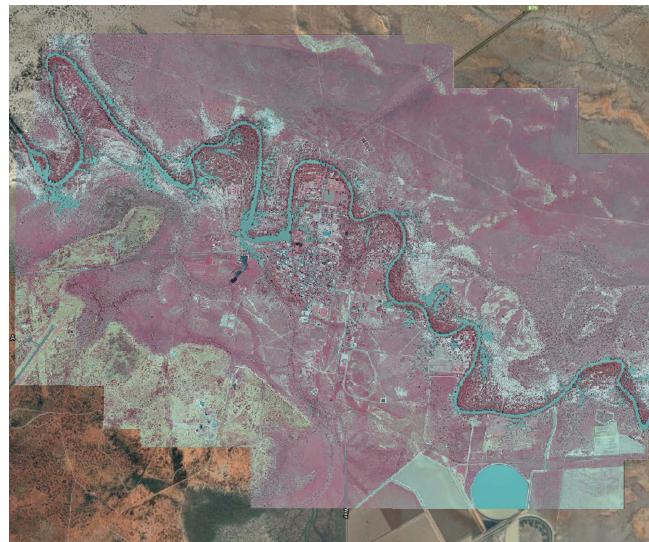
Hawkesbury / Nepean with Identified flood



Hawkesbury / Nepean without Identified flood



Brewarrina with Identified flood



Brewarrina without Identified flood

All Jira issues:

Key	Summary	T	Created	Updated	Due	Assignee	Reporter	P	Status	Resolution
FEAI-103	Code Compliance	<input checked="" type="checkbox"/>	Yesterday 8:53 AM	Yesterday 8:53 AM		Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #ADD8E6; border-radius: 5px; padding: 2px 10px;">TO DO</span>	Unresolved
FEAI-102	Pixel Classification - XGBOOST	<input checked="" type="checkbox"/>	25/Aug/21 11:13 AM	Tuesday 12:21 PM	24/Sep/21	Andrew Smith	Andrew Smith	<span style="color: orange;">=</span>	<span style="background-color: #FFDAB9; border-radius: 5px; padding: 2px 10px;">IN PROGRESS</span>	Unresolved
FEAI-101	Lessons learnt collection session (internal G5)	<input checked="" type="checkbox"/>	18/Aug/21 1:05 PM	19/Aug/21 12:54 PM	30/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: red;">&gt;</span>	<span style="background-color: #ADD8E6; border-radius: 5px; padding: 2px 10px;">TO DO</span>	Unresolved
FEAI-100	Final presentation (TBC)	<input checked="" type="checkbox"/>	18/Aug/21 1:03 PM	18/Aug/21 1:03 PM	18/Oct/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #ADD8E6; border-radius: 5px; padding: 2px 10px;">TO DO</span>	Unresolved
FEAI-99	Project presentation for DCS	<input checked="" type="checkbox"/>	18/Aug/21 12:59 PM	05/Sep/21 2:40 AM	03/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: red;">&gt;</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-98	FOLLOW UP WITH DCS - System able to run on windows, confirm whether this is a firm requirement.	<input checked="" type="checkbox"/>	16/Aug/21 10:22 AM	22/Aug/21 5:29 AM		Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-97	PSR Reporting (August)	<input checked="" type="checkbox"/>	14/Aug/21 10:50 AM	Yesterday 9:08 AM	11/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #ADD8E6; border-radius: 5px; padding: 2px 10px;">TO DO</span>	Unresolved
FEAI-96	Update PMAS, IOCM on wiki	<input checked="" type="checkbox"/>	11/Aug/21 11:31 AM	19/Aug/21 11:01 PM	22/Aug/21	Darren Sheehan	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-95	Compile iteration plan	<input checked="" type="checkbox"/>	11/Aug/21 11:15 AM	16/Aug/21 10:29 AM	22/Aug/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-94	Alpha phase UAT (Bug checking, etc - Internal)	<input checked="" type="checkbox"/>	11/Aug/21 11:06 AM	Yesterday 9:07 AM	07/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-93	Finish off image annotations Darren	<input checked="" type="checkbox"/>	11/Aug/21 11:01 AM	15/Aug/21 4:07 AM	22/Aug/21	Darren Sheehan	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-92	Finish off image annotations Cam	<input checked="" type="checkbox"/>	11/Aug/21 11:00 AM	05/Sep/21 2:40 AM	22/Aug/21	Cam	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-91	Finish off Image annotations Pat	<input checked="" type="checkbox"/>	11/Aug/21 11:00 AM	14/Aug/21 10:49 AM	22/Aug/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-90	A completed end to end working model for AWS semantic segmentation (For UAT purposes)	<input checked="" type="checkbox"/>	11/Aug/21 10:51 AM	05/Sep/21 2:39 AM	22/Aug/21	Andrew Smith	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-89	Masks completed (drawn based on JSON converter)	<input checked="" type="checkbox"/>	11/Aug/21 10:50 AM	Yesterday 9:43 AM	22/Aug/21	Cam	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #C2F7E0; border-radius: 5px; padding: 2px 10px;">DONE</span>	Done
FEAI-88	UAT GMM intro	<input checked="" type="checkbox"/>	11/Aug/21 10:46 AM	05/Sep/21 2:40 AM	08/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #FFDAB9; border-radius: 5px; padding: 2px 10px;">IN PROGRESS</span>	Unresolved
FEAI-87	UATs (Hand over Beta test system to DCS for testing, plus user manual, they will work with it and then return some feedback)	<input checked="" type="checkbox"/>	10/Aug/21 11:29 AM	25/Aug/21 10:23 AM	20/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #FFDAB9; border-radius: 5px; padding: 2px 10px;">IN PROGRESS</span>	Unresolved
FEAI-86	DCS Non-functional Requirements Alignment Review	<input checked="" type="checkbox"/>	06/Aug/21 1:21 AM	Friday 1:43 AM	11/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #FFDAB9; border-radius: 5px; padding: 2px 10px;">IN PROGRESS</span>	Unresolved
FEAI-85	DCS Functional Requirements Alignment Review	<input checked="" type="checkbox"/>	06/Aug/21 1:21 AM	Friday 1:43 AM	11/Sep/21	Patrick Funnell	Patrick Funnell	<span style="color: orange;">=</span>	<span style="background-color: #FFDAB9; border-radius: 5px; padding: 2px 10px;">IN PROGRESS</span>	Unresolved

FEAll-84	Transition Iteration 3	<input checked="" type="checkbox"/>	05/Aug/21 12:24 PM	07/Aug/21 2:41 AM	18/Oct/21	Patrick Funnell	Patrick Funnell	=	<span>TO DO</span>	Unresolved
FEAll-83	Transition Iteration 2	<input checked="" type="checkbox"/>	05/Aug/21 12:23 PM	07/Aug/21 2:41 AM	04/Oct/21	Patrick Funnell	Patrick Funnell	=	<span>TO DO</span>	Unresolved
FEAll-82	Transition Iteration 1	<input checked="" type="checkbox"/>	05/Aug/21 12:23 PM	10/Aug/21 11:29 AM	20/Sep/21	Patrick Funnell	Patrick Funnell	≈	<span>TO DO</span>	Unresolved
FEAll-81	Requirement review and document adjusted based off feedback Pat / Maria	<input checked="" type="checkbox"/>	05/Aug/21 9:45 AM	11/Aug/21 10:41 AM	13/Aug/21	Patrick Funnell	Patrick Funnell	≈	<span>TO DO</span>	Unresolved
FEAll-80	DCS Non Func Req 10 - Cost	<input checked="" type="checkbox"/>	30/Jul/21 12:16 PM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Darren Sheehan	=	<span>TO DO</span>	Unresolved
FEAll-79	DCS Non Func Req 9 - System Availability	<input checked="" type="checkbox"/>	30/Jul/21 12:13 PM	15/Aug/21 10:54 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	=	<span>TO DO</span>	Unresolved
FEAll-78	DCS Non Func Req 8 - Supportability	<input checked="" type="checkbox"/>	30/Jul/21 12:12 PM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	≈	<span>TO DO</span>	Unresolved
FEAll-77	DCS Non Func Req 7 - Performance	<input checked="" type="checkbox"/>	30/Jul/21 12:11 PM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Darren Sheehan	=	<span>TO DO</span>	Unresolved
FEAll-76	DCS Non Func Req 4 - Auditing (Not required)	<input checked="" type="checkbox"/>	30/Jul/21 12:10 PM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	▽	<span>DONE</span>	Done
FEAll-75	DCS Non Func Req 5 - Usability	<input checked="" type="checkbox"/>	30/Jul/21 12:10 PM	10/Aug/21 11:27 AM	05/Sep/21	Darren Sheehan	Darren Sheehan	=	<span>TO DO</span>	Unresolved
FEAll-74	DCS Non Func Req 3 - Data and User Access	<input checked="" type="checkbox"/>	30/Jul/21 12:09 PM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	≈	<span>TO DO</span>	Unresolved
FEAll-73	DCS NonFunc Req 2 - Data Validation - No automated tools	<input checked="" type="checkbox"/>	30/Jul/21 12:08 PM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Darren Sheehan	≈	<span>TO DO</span>	Unresolved
FEAll-72	DCS Non Func Req 1 - Data Storage	<input checked="" type="checkbox"/>	30/Jul/21 12:07 PM	10/Aug/21 11:26 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	=	<span>TO DO</span>	Unresolved
FEAll-71	DCS Func Req 14 - Polygon outputs to contain only the flood extent	<input checked="" type="checkbox"/>	30/Jul/21 11:59 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	≈	<span>TO DO</span>	Unresolved
FEAll-70	DCS Func Req 16 - Solution will report its level of confidence in the produced flood extent map.	<input checked="" type="checkbox"/>	30/Jul/21 11:58 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Darren Sheehan	=	<span>TO DO</span>	Unresolved
FEAll-69	DCS Func Req 13 - Polygon outputs to be closed polygons (i.e. the end of each polygon must join back to the start) Note: open polygon is a line not a polygon.	<input checked="" type="checkbox"/>	30/Jul/21 11:58 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	=	<span>TO DO</span>	Unresolved
FEAll-68	DCS Func Req 15 - Generated flood extent files are to be saved in Amazon S3	<input checked="" type="checkbox"/>	30/Jul/21 11:57 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Darren Sheehan	≈	<span>TO DO</span>	Unresolved
FEAll-67	DCS Func Req 12 - It is preferable for the polygon output to be a single file with a continuous floodline, even where the flood line spans across input mosaics.	<input checked="" type="checkbox"/>	30/Jul/21 11:56 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Patrick Funnell	▽	<span>TO DO</span>	Unresolved
FEAll-66	DCS Func Req 8 - Output flood extent rasters in the same file format as the input	<input checked="" type="checkbox"/>	30/Jul/21 11:54 AM	15/Aug/21 6:35 AM	05/Sep/21	Patrick Funnell	Darren Sheehan	=	<span>TO DO</span>	Unresolved

FEAI-65	DCS Func Req 11 - Output polygons to be clean and minimally smoothed only to eliminate noise.		30/Jul/21 11:53 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-64	DCS Func Req 7 - Output flood extent in the same resolution as the input images		30/Jul/21 11:52 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Darren Sheehan			Unresolved
FEAI-63	DCS Func Req 10 - Output polygons to be georeferenced to the same level of alignment accuracy as the input images		30/Jul/21 11:49 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-62	DCS Func Req 9 - Output flood extents as a polygon in ESRI shapefile format, or GDB (GeoDatabase)		30/Jul/21 11:44 AM	10/Aug/21 11:28 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-61	DCS Func Req 6 - Detect current boundaries from the Aerial Images		30/Jul/21 11:41 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Darren Sheehan			Unresolved
FEAI-60	DCS Func Req 5 - Configuration settings for general operation		30/Jul/21 11:33 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-59	DCS Func Req 4 - Aerial images to be read from Amazon s3		30/Jul/21 11:30 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-58	DCS Func Req 3 - The solution will accept 1 or more aerial images in strip mosaic format. Tiled input for testing only		30/Jul/21 11:28 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-57	DCS Fun Req 2 - The data will be already orthorectified as GDA2020 MGA56 (Hawkesbury) and MGA55 (Brewarrina)		30/Jul/21 11:27 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-56	DCS Func Req 1 - Accept input of aerial images in ecw or JP2 (JPEG 2000) format.		30/Jul/21 11:23 AM	10/Aug/21 11:27 AM	05/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-55	AWS Semantic Segmentation Pipeline		30/Jul/21 10:58 AM	25/Aug/21 10:17 AM	06/Sep/21	Andrew Smith	Patrick Funnell			Unresolved
FEAI-54	Clustering pipeline		30/Jul/21 10:56 AM	25/Aug/21 10:23 AM	06/Sep/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-53	PSR reporting due (June/July)		28/Jul/21 1:33 PM	01/Aug/21 4:38 AM	31/Jul/21	Patrick Funnell	Patrick Funnell			Done
FEAI-52	Pat and Darren discussion regarding Jira and test plan / tests		28/Jul/21 1:29 PM	01/Aug/21 4:38 AM	30/Jul/21	Patrick Funnell	Patrick Funnell			Done
FEAI-51	The first results using AWS Semantic Segmentation (as provided in the previous emails) (Nik)		27/Jul/21 1:36 PM	11/Aug/21 11:03 AM	06/Aug/21	Andrew Smith	Patrick Funnell			Done
FEAI-50	Finalise the clustering technique + Contour for all images (Nik)		27/Jul/21 1:32 PM	Thursday 12:21 PM	06/Aug/21	ablewitt	Patrick Funnell			Done
FEAI-49	Create a pipeline to concatenate images (Nik)		27/Jul/21 1:24 PM	27/Jul/21 1:37 PM	06/Aug/21	Patrick Funnell	Patrick Funnell			Unresolved
FEAI-48	Refine NDWI notebooks to deal with edge cases		27/Jul/21 7:42 AM	11/Aug/21 2:16 PM	30/Jul/21	Andrew Smith	Andrew Smith			Done
FEAI-47	Integrate automatic flood cluster selection into production pipeline BETA		27/Jul/21 7:40 AM	11/Aug/21 2:15 PM	30/Jul/21	Andrew Smith	Andrew Smith			Done

FEAI-46	NDWI Jaccard Scores	<input checked="" type="checkbox"/>	27/Jul/21 7:37 AM	27/Jul/21 8:16 AM	25/Jul/21	Andrew Smith	Andrew Smith	=	DONE	Done
FEAI-44	Meeting scribe 4th August	<input checked="" type="checkbox"/>	26/Jul/21 1:38 PM	04/Aug/21 11:26 AM	04/Aug/21	Unassigned	Patrick Funnell	▽	DONE	Done
FEAI-43	Create Construction Iteration 2 Confluence Page	<input checked="" type="checkbox"/>	26/Jul/21 1:36 PM	02/Aug/21 10:54 AM	01/Aug/21	Patrick Funnell	Patrick Funnell	=	DONE	Done
FEAI-42	0.1_Flood_Extent_Extraction.ipynb   Todo tasks - Shapefile	<input checked="" type="checkbox"/>	26/Jul/21 1:32 PM	11/Aug/21 10:39 AM	04/Aug/21	ablewitt	Patrick Funnell	↗	DONE	Done
FEAI-41	Meeting scribe 28th July	<input checked="" type="checkbox"/>	26/Jul/21 1:27 PM	30/Jul/21 10:53 AM	28/Jul/21	Cam	Patrick Funnell	▽	DONE	Done
FEAI-40	Fix up Git, decide a method of working on the master files as well as making dev files available to all	<input checked="" type="checkbox"/>	26/Jul/21 1:22 PM	11/Aug/21 11:03 AM	28/Jul/21	Patrick Funnell	Patrick Funnell	↗	DONE	Done
FEAI-39	0.1_Flood_Extent_Extraction.ipynb   Todo tasks - Logging and error tracking	<input checked="" type="checkbox"/>	26/Jul/21 1:21 PM	11/Aug/21 10:40 AM	04/Aug/21	ablewitt	Patrick Funnell	↗	DONE	Done
FEAI-37	Project Status Assessment	<input checked="" type="checkbox"/>	21/Jul/21 10:21 AM	Yesterday 9:08 AM	11/Sep/21	Patrick Funnell	Patrick Funnell	=	IN PROGRESS	Unresolved
FEAI-36	Construction Iteration 4 (Subtasks)	<input checked="" type="checkbox"/>	21/Jul/21 10:18 AM	23/Aug/21 12:42 PM	06/Sep/21	Patrick Funnell	Patrick Funnell	↗	IN PROGRESS	Unresolved
FEAI-35	Construction Iteration 3 (Subtasks)	<input checked="" type="checkbox"/>	21/Jul/21 10:18 AM	Yesterday 9:44 AM	22/Aug/21	Patrick Funnell	Patrick Funnell	=	DONE	Done
FEAI-34	Construction Iteration 2 (Subtasks)	<input checked="" type="checkbox"/>	21/Jul/21 10:18 AM	11/Aug/21 11:15 AM	08/Aug/21	Patrick Funnell	Patrick Funnell	↗	DONE	Done
FEAI-33	User Manual	<input checked="" type="checkbox"/>	21/Jul/21 10:17 AM	Yesterday 9:08 AM	11/Sep/21	ablewitt	Patrick Funnell	=	TODO	Unresolved
FEAI-32	Test Model	<input checked="" type="checkbox"/>	21/Jul/21 10:17 AM	Yesterday 9:07 AM	08/Sep/21	Patrick Funnell	Patrick Funnell	=	IN PROGRESS	Unresolved
FEAI-31	Beta Ready Implementation Model of the Final Application	<input checked="" type="checkbox"/>	21/Jul/21 10:17 AM	Yesterday 9:43 AM	08/Sep/21	ablewitt	Patrick Funnell	↗	DONE	Done
FEAI-30	Construction Iteration 1 (Subtasks)	<input checked="" type="checkbox"/>	21/Jul/21 10:16 AM	27/Jul/21 11:57 AM	25/Jul/21	Patrick Funnell	Patrick Funnell	=	DONE	Done
FEAI-28	Product Release Milestone (PRM)	<input checked="" type="checkbox"/>	21/Jul/21 9:54 AM	25/Aug/21 10:26 AM	18/Oct/21	Patrick Funnell	Patrick Funnell	↗	TODO	Unresolved
FEAI-26	Initial Operation Capability Milestone (IOCM)	<input checked="" type="checkbox"/>	21/Jul/21 9:51 AM	27/Jul/21 9:14 AM	06/Sep/21	Patrick Funnell	Patrick Funnell	↗	IN PROGRESS	Unresolved
FEAI-24	Identify development timeline and then the required steps to enter QA and then Prod	<input checked="" type="checkbox"/>	20/Jul/21 1:00 PM	26/Jul/21 1:25 PM	24/Jul/21	Patrick Funnell	Patrick Funnell	=	DONE	Done
FEAI-23	MTP XXX - Testing how Jira tags	<input checked="" type="checkbox"/>	20/Jul/21 11:10 AM	23/Jul/21 1:46 AM	22/Jul/21	Patrick Funnell	Patrick Funnell	↗	DONE	Done
FEAI-22	Email David regarding incorrect dates in schedule for project	<input checked="" type="checkbox"/>	20/Jul/21 2:45 AM	27/Jul/21 10:41 AM	27/Jul/21	Patrick Funnell	Patrick Funnell	=	DONE	Done

FEAll-21	Testing discussed and converted into issues in Jira	<input checked="" type="checkbox"/>	20/Jul /21 2:35 AM	21/Jul /21 1:18 PM	27/Jul /21	Darren Sheehan	Patrick Funnell	=	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-14	Confirm other notebooks that are in production, can be presented	<input checked="" type="checkbox"/>	17/Jul /21 5:34 AM	17/Jul /21 6:48 AM	21/Jul /21	Patrick Funnell	Patrick Funnell	=	<span style="background-color: #d9eaf7; border-radius: 50%; padding: 2px 5px;">TODO</span>	Unresolved
FEAll-13	End to end solution planning	<input checked="" type="checkbox"/>	17/Jul /21 4:40 AM	27/Jul /21 8:25 AM	30/Jul /21	ablewitt	Patrick Funnell	=	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-12	Finalise LCAM Project Plan	<input checked="" type="checkbox"/>	17/Jul /21 1:14 AM	27/Jul /21 8:31 AM	17/Jul /21	Patrick Funnell	Patrick Funnell	≈	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-11	Image Normalisation Investigation	<input checked="" type="checkbox"/>	16/Jul /21 11:16 AM	Tuesday 10:51 AM	23/Aug /21	Darren Sheehan	Patrick Funnell	↖	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-10	Testing with RGB colour space	<input checked="" type="checkbox"/>	16/Jul /21 11:08 AM	01/Aug /21 4:05 AM	23/Jul /21	Cam	Patrick Funnell	=	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-9	Investigating shapefiles and related technical implementation	<input checked="" type="checkbox"/>	16/Jul /21 10:26 AM	26/Jul /21 1:19 PM	23/Jul /21	ablewitt	Patrick Funnell	=	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-8	Submit LCAM revision Session 2	<input checked="" type="checkbox"/>	16/Jul /21 9:06 AM	19/Jul /21 9:12 AM	17/Jul /21	Patrick Funnell	Patrick Funnell	≈	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-7	Switch meeting minutes collection for our weekly meetings to confluence	<input checked="" type="checkbox"/>	16/Jul /21 9:05 AM	16/Jul /21 11:09 AM		Patrick Funnell	Patrick Funnell	=	<span style="background-color: #d9eaf7; border-radius: 50%; padding: 2px 5px;">TODO</span>	Unresolved
FEAll-6	Collate meeting minutes in confluence	<input checked="" type="checkbox"/>	16/Jul /21 9:05 AM	16/Jul /21 11:09 AM		Patrick Funnell	Patrick Funnell	=	<span style="background-color: #ffd700; border-radius: 50%; padding: 2px 5px;">IN PROGRESS</span>	Unresolved
FEAll-5	Upload project management information	<input checked="" type="checkbox"/>	16/Jul /21 9:04 AM	21/Jul /21 1:13 PM		Patrick Funnell	Patrick Funnell	=	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-4	Create the confluence site	<input checked="" type="checkbox"/>	16/Jul /21 9:04 AM	16/Jul /21 9:15 AM		Patrick Funnell	Patrick Funnell	=	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done
FEAll-3	Populate Confluence	<input checked="" type="checkbox"/>	16/Jul /21 9:03 AM	21/Jul /21 1:13 PM	17/Jul /21	Patrick Funnell	Patrick Funnell	≈	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;">DONE</span>	Done

90 issues