MOBILE CANBERRA (PHASE 2) – CASE STUDY REPORT

version: 3.0 – 28/02/14

1. PURPOSE

The report details the history, status, and lessons involved in the Mobile Canberra (Phase 2) project. It draws from and partners the case study report from Phase 1 of the project 'Mobile Canberra – Pilot' which is publicly available on the eGov Cluster website.

It constitutes the final (hand-over) report to the 'customer' – the ACT Government.

It also serves as a reference document for the other parties involved including Imagine Team P/L; the eGov Cluster; and NICTA.

Finally, it should also be useful for any other government agency or jurisdiction considering a similar area of development. Similarly for industry, research, and/or academia.

2. BACKGROUND

eGov Cluster
The eGov Cluster (the 'Cluster' for short) is sponsored by NICTA; it fosters the uptake of Australian ICT innovation by the public sector.

It does this to both advance the Australian ICT industry and to improve public administration.

One mechanism the Cluster uses to achieve its goals is the establishment and running of collaborative projects, bringing together government; industry; and research.

The aim of such projects is to explore and develop new technology ideas to the point of proven feasibility / non-feasibility. This approach in effect fast-tracks what can be a lengthy and fraught process so that the potential of new Australian IP is realised and not lost or exported.

The Phase 1 project Mobile Canberra – Pilot, and this project, Mobile Canberra - Phase 2 were both conducted as collaborative projects.

Project Genesis
The Mobile Canberra project was initiated around August 2012 at the request of the ACT Government via its Executive Director of the Government Information Office (GIO).

The ACT Government had two drivers that prompted the original request:

1. Strong commitment to being an open Government and in particular promoting the use of government data provided to the community through its open data portal, dataACT; and

2. A desire to participate in and encourage Canberra as a connected and digital city.

The ACT Government had made a public commitment to providing new services over mobile / smart-phone platforms. Around this time the ACT GIO had become aware of a local ICT start-up with proven capabilities in app development.

The ACT GIO formally sought the Cluster's consideration of establishing a collaborative project on app development. The concept for the app was that it answer this question for users: "Where is the nearest ……. service?" Services would include things like: bus stops; taxi ranks; toilets; etc.

The design criteria and scope were defined. In due course the Cluster's Steering Committee approved the establishment of the project to be known as Mobile Canberra – Pilot (in effect 'Phase 1' in the light of subsequent developments). The project team comprised: the ACT Government through its GIO and senior Shared Services representative (the customer); Imagine Team P/L (the developers); NICTA Engineering and Technology Development (general oversight of development and user experience design); and the Cluster (project managers).

The project ran for approximately 6 months between October 2012 and March 2013. It examined two areas of innovation:

1. A device-independent mobile / smart-phone app; and

2. Functionality that drew on the Open Data platform of the ACT.

The critical design criterion was that the app be developed in HTML5 rather than the native or device specific (Apple and / or Android) app environments.

At the agreed completion of Phase 1 development; the project team's collective assessment was that the app provided a useful and potentially attractive service, but it had limited appeal for two reasons:

1. It was slow – HTML5 struggles with geo-locating, especially inside buildings; and

2. It didn't include the most useful services that were part of the original specification, e.g. taxi ranks; bike-paths because the required government data had not become available.

Consequently, and in due course the Mobile Canberra - Phase 2 project was established in June 2013. The project team from Phase 1 remained in place for Phase 2 with the addition of one other party (see below).

Project Objectives
The proposal for the Phase 2 project at initiation is at Attachment 'A'.

In summary the project sought to extend the boundaries of the Phase 1 development in 3 specific areas:

1. Overcome performance issues by exploring a hybrid (ie HTML5 plus native device code) app development but with the minimum amount of native code possible;

2. Improve functionality by both accessing a broader range of useful government datasets, and by engaging creative design assistance for the 'look and feel' of the app; and

3. Explore options for the on-going hosting and support of the app.

The ACT Government's expectation was that at the end of the Phase 2 project:

1. The collaborative work would produce an app that could be released; and

2. To enable this to occur there would be marketing, communications and possibly further development work required for a 'launch' and the decision on hosting and support was needed.

The work involved in these latter two areas is deemed outside the scope of a Cluster Collaborative Project and so would be the responsibility of the ACT Government.

Project Operation

The actual project participants and their intended contributions are also detailed in Attachment 'A'.

The project was initiated in mid-July 2013 with a planned duration was approximately 3 months. The detailed scope is in Attachment 'B' (Imagine P/L provided and approved Scope of Work).

The project team met approximately every 2 weeks.

All major milestones, as revised from time-to-time due to unforeseen circumstances were met.

System development and testing were completed at the end of October 2013. Some further work – outside the scope of this project was undertaken to support a possible launch in early November. The final version of the app was available from the app stores; and all associated materials were handed over to the ACT Government late November 2013. The project itself is deemed completed with the publishing of this report.
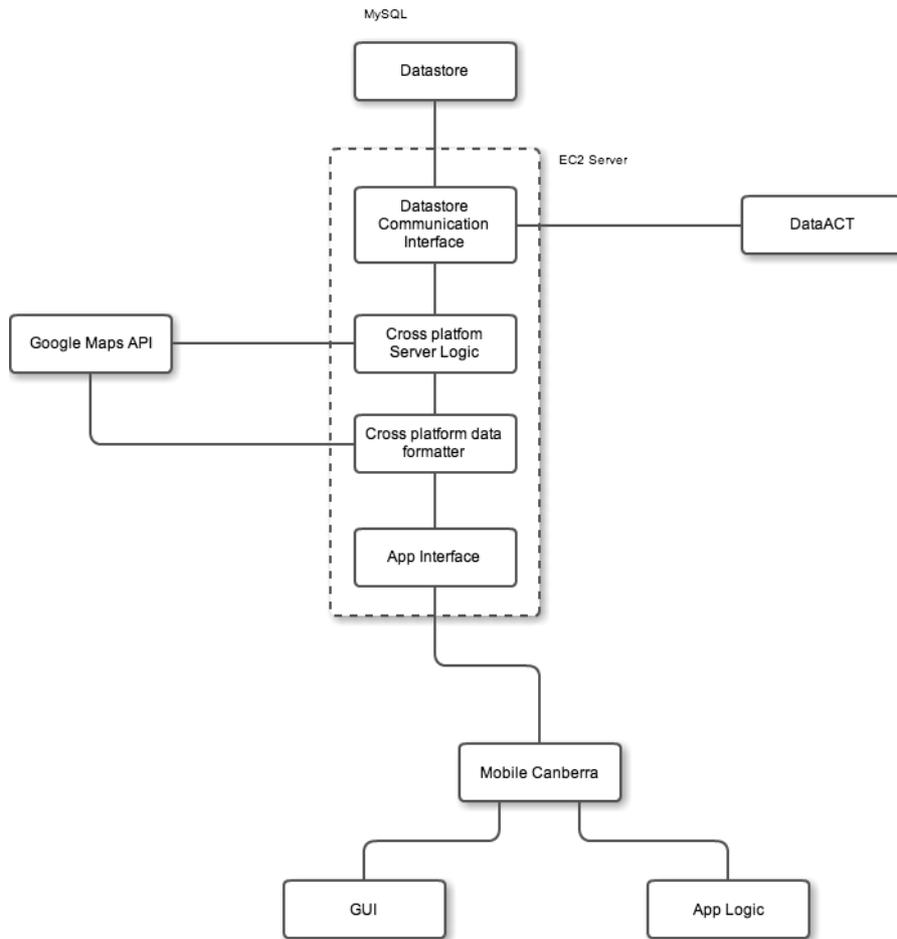
3. STATUS

Project Status

The project has delivered a working app for both Apple and Android devices. The overall assessment of the app is that it is of extremely high quality in terms of performance, presentation and functionality.

Copies of selected screens for the app are provided here.

The high-level design for the app is shown here.

For the full technical expose, go to the GitHub site at:

https://github.com/actgov/Mobile-Canberra

The initial expectation was that the app would draw from 6 datasets to present the app's service location function. These datasets were:

- Bus stops
- Libraries
- Playgrounds
- Public toilets
- Benches / Public furniture
- School locations / technical colleges

The hope was that the following datasets would become available to the app:

- Bike racks
- BBQ Areas
- Drinking fountains
- ATMs
- Sculptures

- Parking / ticket machines
- Government department locations
- Medical centers
- Public phones
- Polling places / election booths
- Police stations
- Hospitals
- Taxi ranks
- Registered Justice of the Peace locations

And although the app has been designed to dynamically accommodate new datasets as they become available, at the time of release the following datasets are included:

- Bus Stops
- Public Toilets
- Playgrounds
- Libraries
- ACT Tafe Campuses
- ACT Schools
- Public Art
- Public Furniture
- Public BBQs
- Basketball Courts
- Drinking Fountains
- Skate Parks

The app has over 9200 points of interest in total.

The pre-selected datasets were not able to be included because the data would not be released or was not able to be provided in a suitable format. In the course of the project the possibility was raised of being able to include medical services data such as GP locations, hospitals, chemists, etc. It was equally disappointing that in the end this was not implemented for what appeared to be relatively straightforward and readily solved procedural issues.

<u>User Feedback</u>
The detailed analysis and findings are contained in the separate report at attachment 'C'. In summary:

1. Concept:
   - The app was really well received
   - There was a surprisingly positive reception amongst tourists.

2. Performance:
   - The feedback around the look and speed of the app was unanimous praise, particularly on the Android platform
   - One user had some concerns around the clustering functionality, and was initially confused by the functionality

3. Data:

- All the participants found the data accurate, but 75% of the users suggested that Mobile Canberra would benefit from either more services, or more information on the existing services
- A number of specific suggestions for possible datasets (such as events and historical data) were raised

Overall Assessment

The Mobile Canberra – Phase 2 project has again shown that productive collaborative development through the Cluster is both possible and worthwhile. The ACT Government for example has said that the experience of collaborating via the Cluster has been a very good one, and intends to do more of it in the future.

This particular collaboration has delivered a high quality, releasable app and technical learnings associated with:

1. Overcoming performance limitations of a pure HTML5 approach through the development of a 'minimalist' hybrid app (HTML5 plus a minimum of native device code); and

2. Improving user experience by using expertise from the creative arts sector in the design phase.

As with Phase 1, this project highlights how dependent on-line government services are on having ready access to relevant and reliable source data. The design of the Mobile Canberra app is such that it can identify and use services datasets as they become available on the ACT Government portal. It is expected that over time the list of services locatable via the app will continually grow. Nevertheless, at this stage the available datasets are few and not all of high user value. The ACT Government will need to ensure that a regularly updated source of published data is available from data custodians within government.

At the agreed completion of development; the project team's collective assessment is that the functionally the app has overcome all the performance issues from Phase 1; delivers a significantly superior user experience; but is let down by the limited set of services it can display.

The ACT Government has a state-of-the-art hybrid app model and full access to the app's source code should it wish to undertake further development.

The ACT Government now has a good understanding of the limitations of its current Open Data offering - the collaboration participants would welcome the opportunity to provide further input to any planning about how to improve that situation.

The collaborative project approach of the Cluster has proven to be a very effective model for developing and/or refining new innovative ideas in a low-risk, low cost way that doesn't breach government probity and equity requirements.

4. LESSONS

Technical

The technical aims for phase 2 of the project were two-fold:

1. To further explore an efficient multi-platform approach to the development with performance as a key criterion; and

2. To explore a solution that emphasised a scalable architecture.

The previous phase of Mobile Canberra involved the use of PhoneGap, a technology that allows HTML5 based web-apps to access device specific technologies (such as geo-location), and be deployed as traditional apps onto various platforms (iOS, Android, etc.) from a singular codebase. While functional, it was found that this technology was still immature, and end-users highlighted issues around the poor performance of the app. To remedy these deficiencies, it was decided that the second phase would focus on performance, while still trying to retain some of the advantages of PhoneGap. Namely, the second phase of Mobile Canberra revolved around a "Hybrid" approach, whereby code logic would be unified where possible, but otherwise native code would be written for each platform targeted. While there would be an inherent duplication of code in the varying platforms, a significant amount of code would be shared, ensuring an efficient approach without sacrificing the performance of the app.

To that end, this phase of Mobile Canberra was successful. Mobile Canberra was written using a modular approach where the logical computations of the app were handled on an external server, and the displaying of the data was written in code native to the device on which it ran. Furthermore, the architecture of the code written for each platform is the same. To highlight an example of this, in both the iOS and Android versions of the app, there exists a "Dataset Point" object. While the code defining this object is different on each platform, both are identical in that they consist of a "Title", a "Description", a "Parent Dataset", and a latitude and longitude. In this way, the code is directly comparable, despite being written in different languages.

The performance of the app is comparable to an app written entirely on the handset, and a significant portion of the app's code is shared across multiple platforms.

Another problem identified in the prior version was the extendibility of the app. Specifically, it was discovered that not only were datasets updated frequently, but that entirely new datasets would become available throughout the life of the product. A traditional approach would involve manually updating the app each time a new dataset or dataset update became available. This would not only be an expensive exercise, but would also require that end-users have the most up to date version of the app each time such an update would be pushed through. This could become a cumbersome requirement if there several updates made to the data each month.

To resolve this issue, two approaches were taken. The app user interface (UI) was designed in a way such that it became data agnostic. Rather than having to create graphical icons for varying datasets (i.e. bus/BBQ/taxi/etc icons), each dataset was randomly assigned a color. In this way, the UI would be able to expand to allow for entirely new datasets with minimal involvement from the managing parties. In order to resolve the issue of updating the datasets, the server managing the centralised logic of the app pulls datasets directly from the originating source in real-time. In this way, the data is always up to date, and the user is no longer required to update the app each time an update to a dataset is made.

Procedural

The project itself operated successfully; it delivered on the planned outcome within time and within budget; all parties contributed as per their commitment including being active participants on the project team; at no time was there the need to reference the formal signed Agreement underpinning the project; all parties promptly paid any monies committed as per the Agreement.

As stated above, the Cluster's collaborative project model has proven to be a low-cost; flexible, yet dynamic approach to requirements definition. It presents as a blueprint for governments interested in exploring innovative solutions to business needs as a means of driving transformational improvements.

The developers (Imagine P/L) involvement has continued as exemplary; they delivered a very high quality system; they delivered what they said they would on time; they contributed actively in all planning and review sessions; they provided additional information requested promptly; the assessment is that they did work beyond what was planned to ensure the project was as successful as possible.

The level of expertise and professionalism displayed by such a young business is impressive. It is a credit to the team and to their educators. Considering the attractiveness of Imagine Team's charge-out rates compared to much larger and higher-profiled industry competitors; and their creativity and responsiveness, tapping into these sort of capabilities should represent a very strong value proposition for government.

At the request of the eGov Cluster, Imagine augmented their capabilities with a creative arts company – Zoo P/L. This was via a sub-contract. Zoo provided invaluable assistance in interpreting user feedback and with graphic design considerations, both of which were critical inputs to the final design of the app.

5. RECOMMENDATIONS

eGov Cluster Collaborative Project Model
The collaborative project model employed by the Cluster represents a rapid and effective, yet low-risk, low-cost approach to the exploration of innovative ICT ideas by government, research and industry.

The opportunity to develop ideas and experiment with their implementation presents considerable challenges to governments focused largely on risk. With such projects the risks are often not known and failure is unfortunately not seen as an important part of the learning process. Agile, modest, targeted and manageable projects undertaken in partnership with industry and research are a very good way of opening up the benefits of innovative thinking.

The participants recommend:
1. Governments incorporate the option of innovative collaborative experimentation within the framework of the eGov Cluster (or independently along similar lines) as one way of seeking improvements to government service delivery and processes.

Hybrid App
A purely HTML5 based app solution for this kind of service oriented app was previously shown to be not viable. This has meant a hybrid approach was required. This project has developed one such hybrid app where the mix of HTML5 and device code is optimised based on functionality needs. And even though the app is not device agnostic, the app has been architected to be able to dynamically identify and use new publicly available datasets (via the ACT Government's Open Data portal); a feature that will reduce the need for new version releases and the consequential impacts this would have on the owners and users of the app.

The participants recommend:

2. As the app code and documentation is publicly available on GitHub, under open source licence Governments (and industry) should consider this solution as a possible basis for their own developments.

<u>Government Open Data</u>
As noted in the recommendations for Mobile Canberra (Pilot) – ie Phase 1, Government Open Data initiatives are in part designed to promote innovation and entrepreneurship in the expectation that economic benefit will be created through developments such as Mobile Canberra. To realise such benefits, government must ensure that their Open Data programs are first and foremost treated as a whole-of-government programs and then directed, managed and properly resourced. To assume they will happen 'organically' overlooks the very real policy, cultural and technical challenges within government, and the engagement challenges externally. Whilst some progress has been made over the course of Phase 2, it has been relatively slow and protracted.

The participants recommend:
3. Governments make a whole-of-government commitment to directing, managing and resourcing their open data offerings to improve credibility in the market and to underpin success for the exploits of future users.

Collaborative Project – Registration of Interest

TITLE

Mobile Canberra (Pilot) – Phase 2

TIMEFRAME (INDICATIVE)

Commence	June 2013
Main milestones	Project definition – at week 1; Concept feasibility – at week 2; POC solution – at week 8; Testing & proofing – at week 10; Report – at week 12;
Completion	Sept 2013

SUMMARY

Strategic Intent	Finalising a methodology for low maintenance government commissioned location-based information apps for use by the ACT community, achieving acceptable performance and sustainable support
Solution Concept	A hybrid HTML5 and platform-specific app providing ACT Government location services information; the data derived from dataACT, the ACT Government open data platform; ways to overcome performance problems encountered in the first phase of the pilot
Other	The project will seek to achieve a best-practice protocol for such government applications. This will be fully documented, with it and the system provided as open source

PARTICIPANT ORGANISATIONS & PRINCIPALS

Facilitator	e-Government Cluster – Michael Phillips 0418 217 179 michael.phillips@nicta.com.au
Agencies - Strategic	Executive Director, ACT Government Information Office – Mick Chisnall 0419 894 680 michael.chisnall@act.gov.au
- Policy	ACT Government personnel from ACT Shared Services and relevant data custodians from across ACT Government. Representative t.b.a.
- Customer	ACT Shared Services – application hosting. Representative t.b.a.
Industry	Imagine Team P/L – Zakaria Bouguettaya 0435 029 655 zakaria@imagineteamsolutions.com Creative Design company. Representative t.b.a.
Other	NICTA – Engineering and Technology Development (general oversight of development and user experience design)

DETAILED DESCRIPTION

Executive Summary - Strategic Intent	As part of its commitment to a Mobile Canberra and its overall Connected (Digital) Canberra program, the ACT Government wishes to drive a dual strategy of: - delivering new and/or improved services, derived from the dataACT open data platform and delivered as mobile apps; and

- Solution Concept - Other	- encouraging entrepreneurship and new business development through the opportunities the new services offer The plan is to work from the learnings of the initial Mobile Canberra Pilot (Phase 1) and explore the issues associated with: - development of a hybrid app; and - improvement in quality and currency of data on dataACT in support of a broader spectrum of user demand The project will seek to achieve a standard (best-practice) protocol for such government applications. This will be fully documented and published in a case study; and any source code developed will be released as open source.
Aim	The project seeks to pave the way to creating easy mobile access to government location-based data in line with current community expectations. In doing so it seeks to define a useful standard; create an approach with applicability in other jurisdictions; provide real encouragement for local industry to take advantage of open government data; and demonstrate the usefulness of an app or set of apps for the Canberra community. This project will further test the Collaborative Project business model of the e-Government Cluster. Collaborative projects are a central program for the Cluster. They provide a low-risk, low cost, independent mechanism for testing new and innovative technologies ahead of any formal procurement process.
Innovation	Creating a low-maintenance framework whereby government data is made accessible as key content for apps across mobile platforms including Apple iOS and Android. Distribution should be multi-channelled but in particular through standard app stores.
Deliverables	Further development of the Phase 1 system seeking to address the performance, presentation and functionality issues identified in the Case Study report. The presumption is that a hybrid HTML5 and platform-specific app will be required. Further refinement of the dataACT offerings to better support the delivery of desired service functionality including: • taxi ranks around Canberra • car parks in the City, the Parliamentary Triangle, and in other town centres • disabled parking and disabled toilets • bike paths and popular bike routes around Canberra • parks and playgrounds in each suburb • shopping and other retail centres and petrol stations • major locations of interest including tourist sites • public toilets and other amenities • bus routes, stops and other public transport information A Case Study report for the project plus all source code and related documentation.
Desired outcomes	Improved services to citizens of Canberra Fostering of local industry – economic diversification Advancement of the 'Digital City' concept for Canberra; Canberra demonstrating leadership to other jurisdictions

	Reinforcement of the important role of the e-Government Cluster in fostering ICT innovation with government
Budget (indicative) - Cash - In-kind	▮▮▮▮▮ T.b.d. but estimated to be at least equivalent to the cash outlays
Contributions - e-Gov - ACT Gov GIO - Other ACT Gov agencies - Imagine - NICTA	Project facilitation; Steering Committee participation Lead customer input; Steering Committee participation Funding ▮▮▮▮▮ Input to design of solution and case study Systems development; testing; documentation Lead contractor (Collaborative Project Agreement); engineering and related support to the project team; facilities (as required)
Intellectual Property - Background - New	To be documented; to be retained by the respective participant To be open-source; copyright to be retained by principal developer(s) for future exploitation at their discretion; ACT Gov to have further development rights as required
Project Milestones - Commence - Project Definition - Concept feasibility - POC Solution - Testing & proofing - Report	Late June 2013 End June 2013 End June 2013 Early Aug 2013 Late August 2013 Mid Sept 2013
Governance - Steering Committee - Project Manager	ACT Gov: Mick Chisnall, Lauren Cochrane; e-Gov Cluster: Michael Phillips; NICTA: Bill Simpson-Young. Michael Phillips.

STEERING COMMITTEE CONSIDERATION

Steering Committee Member	Comments	Approved / Not approved
All	Tabled and discussed at Steering Committee meeting held 19 June 2013	Unanimously Approved

Imagine Team Pty Ltd
Statement of Work

2013-07-31

Version 1.4

Time and materials

Client name	
Project Owner	
Project name	Mobile Canberra
Engagement duration	2 Months

Statement of work

A. Executive Summary

The purpose of this document is to provide requirements for development of Mobile Canberra. The document will serve to be a checklist of deliverables required for the project, and following payment terms. This document is primarily intended to ensure that no serious differences in expectations and responsibilities occur, deliverables are accounted for, and for sign off between the Imagine Team Pty Ltd and project owner for expected obligations.

B. Business Objectives

1. Product Description (Solution)

The project is aimed to provide value to the public within Canberra by providing location based information through mobile web apps, and to create a code base for future projects utilising data.act.gov.au data. This project is a direct continuation of a previous project, and its purpose is to address deficiencies encountered. This phase of development will address the issues with the cross-platform development (Specifically, geo-coding performance, and flexibility of the format of the data-sources), and explore the feasibility a hybrid development approach. It shall also explore the presentation layer of the application. The project deliverable details will be based on the deliverables of the discovery phase.

2. Deliverables

Deliverables include:

- Backend Deliverables
    - Source code
        - Phase: Deployment
- iPhone App
    - Binaries (Complied code)
        - Phase: iPhone app demonstrable- iPhone complete
    - Source code
        - Phase: Deployment
- Android App
    - Binaries (Complied code)

- - - Phase: Android app demonstrable- Android complete
    - ○ Source code
      - - Phase: Deployment
  - ■ Documentation
    - ○ Technical Documentation (Architecture designs)
      - - Phase: Discovery - Stage 1
    - ○ Project Documents (Mockups)
      - - Phase: Discovery - Stage 1
    - ○ PSD Graphics
      - - Phase: Design - Stage 2
    - ○ User acceptance results
      - - Phase: User testing
  - ■ Deployment
    - ○ Continued minor modifications to ensure successful deployment to Apple AppStore and Android PlayStore
      - - Phase: Deployment
    - ○ Deployment of backend to preferred URL
      - - Phase: Deployment

Deliverables exclude:
- ■ Original data management/creation
- ■ Photography, image searching or image pricing

C. Project Description

1. Scope Includes:

- Backend Development
- App Development
- Simultaneous release to stores
- Graphic Design
- User acceptance

2. Completion Criteria

The project will be deemed successful if the deliverables are fully featured, and free of major bugs.

Additional features that are not included in the functional specification must be negotiated to re-assess completion criteria, and unless otherwise agreed in writing and signed by both the project owner and Imagine Team Pty Ltd, deliverables are as outlined in the above signed scope documentation.
Implemented (as opposed to released) code/features will determine completion of milestones.

3. Assumptions

- ■ Licencing and permission for the use of any data provided for use in the project by Imagine Team Pty Ltd will be secured before the data is provided.
- ■ App content/data will be provided to Imagine Team Pty Ltd as early as possible in the project

D. Project Approach
1. Planned Approach

- Review, verify, and validate results of analysis phase
- Development
- Testing
    - Product quality assured
    - Sign-off/acceptance
- Release
- Reassess ongoing support/maintenance

2. Roles and Project Stakeholders

The following role definitions are being applied to the resources assigned to this project:

Project Sponsor *( )*	Provides executive team approval and sponsorship for the project. Has budget ownership for the project and is the major stakeholder and recipient for the project deliverables.
Project Owner *( )*	Provides functional definition and review to the Project team. Resolves all policy issues with the appropriate policy owners in order to provide a clear, decisive definition. Resolves conflicts or issues regarding project expectations in functional areas.
Development Team *(Imagine Team Pty Ltd* ABN: 88152460332*)*	Provides overall management to the project. Accountable for technical development and managing the work plan, securing appropriate resources and delegating the work and ensuring successful completion of the project.
Design Team *(ZOO Advertising Pty Ltd* ABN: 70146352052*)*	Provide designs for the app, and exploration of branding opportunities

F. Project Controls

1. Status Reports

Status reports shall be provided through weekly emails, or meetings as necessary. Status reports shall include schedule updates, feature updates and further information as deemed appropriate by Imagine Team Pty Ltd.

2. Communication Management

The project point of contact will be the direct contact between project owner and Imagine Team Pty Ltd.

Communication shall be undertaken through email and phone calls as required.

A turn around of 48 hours for phonecalls, messages and emails marked "URGENT" is required, with a delay of 48 hours resulting in a 48-hour delay in all project timelines. Exceptions for short periods are by prior warning in email.

3. Cost and Monetary Requirements

The Imagine Team Pty Ltd development team will conduct work for a fixed price of ████████
GST exclusive. External costs including hosting and app store yearly fees are not included, and are the responsibility of the project owner. Additional hourly costs apply for deployment as specified above.
Costs accrued will be paid via EFT. Monetary payments are due within a 7 business day period after phase completion.

Payment is the responsibility of the Project Owner (as defined above), regardless of the source of payment (be it government grant, private funding, or external investment)

Acceptance and authorization

This statement of works is valid for a period of two weeks while not yet signed by both parties, from the date on the title page.

IN WITNESS WHEREOF, the parties hereto each acting with proper authority have agreed towards the execution of this Statement of Work.

Company Name/ABN (If Relevant)	Company Name/ABN
	Imagine Team Pty Ltd/88152460332
Full Name	**Full Name**
	Zakaria Bouguettaya
Title	**Title**
	Director
Signature	**Signature**
Date Signed	**Date Signed**

MOBILE CANBERRA – PILOT

User Test Results

What kind of phone do you have?	What age group?	Which would you say you were?	Did you find Mobile Canberra was fast enough?	Did you find MobileCan berra was accurate?	Did MobileCan berra provide you with enough detail for you to complete a task (e.g. Parking, transport)	Would you recommen d Mobile Canberra to your friends/fam ily?	Please tell us one thing you liked about Mobile Canberra:	Please tell us one thing you didn't like about Mobile Canberra:	Which services would you like to see added?
Android	45-65	Canberra Local	Yes	Yes	Yes	Yes	Speed	Not enough info	Canberra connect, government offices, taxi ranks, toilets, parking lots
Android	15-25	Canberra Local	Yes	Yes	Yes	Yes	Looks great	Want some other services	Taxi's
Android	35-45	Visit Canberra Frequently	Yes	Yes	Yes	Yes	That I can see a bunch of things together	Needs more things I can see around me	Hard to say- information about the bus stops?
Android	15-25	Canberra Local	Yes	Yes	Yes	Yes	Really good looking for an Android app	Loading the datasets took awhile, but not sure if that's Vodaphone	Historical stuff?
iPhone	35-45	Tourist	Yes	Yes	Yes	Yes	Simple and quick	Not enough info in each point	More information about tourist points of interest/show me what to visit
iPhone	15-25	Canberra Local	Yes	Yes	Yes	Yes	Hands down, best looking Canberra app	I want it to speak to me so I can use it when I'm driving	Maybe more stuff around stores and clubs
iPhone	25-35	Visit Canberra Frequently	Yes	Yes	Yes	Yes	Pretty cool I found things I didn't know about (mostly art)	Anyway to simply browse stuff without looking at a map	More information, but not necessarily around getting there
iPhone	25-35	Canberra Local	Yes	Yes	Yes	Yes	I liked seeing the random things around me	I think the points need more info, took me awhile to get the map scrolling point moving thing	Events