LUMINATOR
TECHNOLOGY GROUP

Jasper Phase III

Job: Front End Development of Jasper
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1. Overview

This document will serve as breakdown of the scope of work, budget, deliverables and estimated timeline for the Jasper Phase III project for the Luminator Technology Group. The goal of this work product attempts to answer the following requests.

1. Examine the current tools and technologies used in existing mSET web application (not in depth, just enough to execute #2) (Assessment can be found in Appendix a.)
2. Prepare a SOW such that your team or another team could implement the Jasper UI as defined with our mockup
3. Prepare an estimate in time and dollars for your team to do the work defined in #2 above

2. Expectations

Luminator Technology Group

- Will make every effort to be available for all queries related to design, and content in a timely (within 24 hour) period.
- Will make every effort to provide Jesse Orrico LLC with such information as needed in order to complete the scope of work as outlined below. ***It is understood that if a request has been made and it takes longer than 24 hours to respond to the request the timeline will be moved out appropriately***
- Will provide Jesse Orrico LLC with development input for any new development during the duration of the project.

Jesse Orrico LLC

- Provide an estimated time to delivery and cost for the scope of work as outlined below
- Will make every effort to be available for all queries related to development, and content in a timely (within 24 hour) period.

3. Scope of Work/Outcomes

Below is an itemized list of work to be completed on the **Jasper Phase III Project:**

SOW

1. Will assemble the components for Asset Manager into working prototypes of pages and screens (given sample data) that demonstrate the vision and functional requirements of the app's design

2. For each of the components identified in the Jasper Components Inventory:
    a. Develop its markup and css to approximate its visual design in the mockups from Phase II
    b. When developing these components, adhere to the front-end development criteria for tools, methodologies, libraries and tests listed in the Libraries section of Assumptions
    c. Develop its properties API *to the extent that its functionality requirements can be demonstrated with sample data*

3. Will assemble the components for Jasper into working prototypes of pages and screens (given sample data) that demonstrate the vision and functional requirements of each respective app's design

4. Will collect and organize all of the developed components into the inception of a global Granite UI Library for use in the other apps within the Granite suite (as an npm module)

5. When necessary, upgrade any existing mSET components that will be used within Jasper or Asset Manager from Polymer 2.0 to Polymer 3.0, and assimilate those components into the Granite UI Library

6. Will provide best-practice documentation for the maintenance of the components within the Granite UI Library

7. Will execute the agile development of core functionalities of Granite Jasper module

8. Will provide a representative for 1 to 2 development meetings a week. The goal is to gather any and all needed feedback/questions/ideas thus allowing the burden of the disbursement of work to fall on Jesse Orrico LLC. **because there are many people involved on the Jesse Orrico LLC side of this project it will be more cost effective and expedient to not have the entire team be present in those meetings.*

9. Will provide feedback to stakeholders on an ongoing basis for questions regarding the User Interface or User Experience for the Jasper Application.

10. Will provide ongoing designs for additional screens as needed

11. Will provide ongoing designs for additional interstitial applications as needed

6. KPI and Service Level Agreement.

JesseOrrico LLC will comply with the following KPI and SLA and give LTG regular reports per the reporting frequency indicated below. The reports must demonstrate Jesse Orrico LLC's adherence to each such SLA.

Deliverables

KPI Name	Definition	SLA Measurement	Target	Compliance	Frequency
On Time Delivery	Jesse Orrico LLC should manage project schedule proactively; accepted work items should be delivered on time.	(Total # of accepted work items /Total # of work items)	100%	95%	Sprint
Document ation	To keep the project knowledge for further reference, Jesse Orrico LLC should maintain a well-organized Knowledge Base, and get Luminator Technology Group FTE approval.	(# of sign-off documents / # of documents generated)	100%	95%	Monthly

Quality

KPI Name	Definition	SLA Measurement	Target	Compliance	Frequency
On Time Delivery	Jesse Orrico LLC should control product quality to make no P0 bug found in production environment	total # of P0 bug in production	0	95%	Monthly
Test Quality	Jesse Orrico LLC should write high quality test cases that meet design	(# of test cases that meet design) / (Total # of test case)	95%	90%	Monthly
Bug Fix Quality	Bugs should be fixed and closed appropriately	(# of Reopened bugs/ # of Fixed Bugs)	0%	5%	Monthly

Communication

KPI Name	Definition	SLA Measurement	Target	Compliance	Frequency

Daily scrum meeting	Jesse Orrico LLC should lead project scrum meeting	Meeting Attendance	100%	95%	Daily
Bi-Weekly Project Review	Jesse Orrico LLC delivery manager should review project quality, process with Luminator Technology Group business owner every two weeks	Meeting Attendance	100%	90%	Bi-weekly
Phase Gate Meeting	Jesse Orrico LLC should lead phase gate meetings with Luminator Technology Group business owners	Meeting Attendance	100%	90%	Per Project Plan

Invoicing

KPI Name	Definition	SLA Measurement	Target	Compliance	Frequency
Timely Invoicing	Jesse Orrico LLC should issue an accuracy invoice on time to avoid missing Luminator Technology Group billing cycle	Invoice amount is correct as planned in SoW, Invoice is sent on payment schedule defined in this SoW	100%	90%	Twice a Month

7. LTG Supplied Materials.

LTG will provide the following facilities, tools, equipment and other LTG materials to Jesse Orrico LLC for the purposes of performing the services.

- **Code Access:** *Luminator Technology Group will grant Jesse Orrico LLC team the access right of Code Access (e.g., source depot) as appropriate*
- **Build Access:** *Luminator Technology Group will grant Jesse Orrico LLC team the access right of Build as appropriate*
- **Knowledge Access:** *Luminator Technology Group will grant Jesse Orrico LLC team the access right of team Knowledge Base containing project related documents as appropriate*
- **Project related software:** *Luminator Technology Group will provide all project related software to Jesse Orrico LLC, including license to access involved 3rd party software/services as appropriate*
- **Remote access to lab servers:** *Luminator Technology Group will provide test servers in the lab and Remote access to these involved test servers to Jesse Orrico LLC, as appropriate*
- **Automation framework:** *Luminator Technology Group will provide this to Jesse Orrico LLC including related docs and specs, code access and test cases, if any*

- **In-house tools:** *Luminator Technology Group will grant permission for Jesse Orrico LLC to use in-house built tools used in this project, as appropriate*
- **Deployment:** *Luminator Technology Group will set up a cloud environment for Jesse Orrico LLC to deploy containers for testing. (see Assumptions: Deployment a))*
- **Test:** *Luminator Technology Group will provide DevOps contacts at LTG to work with Jesse Orrico LLC. (see Assumptions: Deployment b))*

8. Assumptions

Category	Assumption Details	Source
Issue Tracking	*"We currently use a system called YouTrack by JetBrains. If you prefer to use a different system that would probably be fine. Beyond that, I think that we are pretty flexible. Propose what you are comfortable with, and it will likely work for us as well."*	Mark
Documentation	*"Luminator has different documentation requirements than Apollo, but we are currently meeting to standardize on documentation, tools, and libraries. The key here is that the documentation should be useful to developers. Code comments are useful for any code that is non-intuitive for someone unfamiliar with the code. It would be nice to have some external documentation for any web components created. See webcomponents.org for example markdown files. Each directory in your source tree should contain a useful README.md file."*	Mark
Deployment	*"a) We aspire to develop cloud native applications. This implies the use of (Docker) containers for deployment. We will set up an environment for you to deploy containers for testing. b) We will provide DevOps contacts at LTG for you to work with."*	Mark
Communication	*"Your audience will be developers working on the LTG suite. I suggest weekly check in meetings, with occasional demos and code walkthroughs with the goal of ensuring consistent standards across the the teams."*	Mark
Handoff	*"Your obligation ends when the code you develop is accepted by LTG. The weekly meetings will help ensure that the we are on track for acceptance. The basic acceptance criteria will be that the code implements the agreed upon functionality as specified by the UI/UX design and other documents. In addition the functionality, we will be interested in robustness, performance, and the quality of the underlying code. We can work together to come up with these criteria."*	Mark
Architecture	*"Our architecture diagram is currently more complicated than it will be by around the time that you do this work. We currently employ an agent to communicate with the legacy back end, but we have plans to split the back end into a set of microservices.* *For the part that you are working on, the architecture is really just a back end server web/REST server that interfaces with both the front end code and the existing INFOtransit back end via TBD REST API calls. I do not currently have*	Mark

	a diagram, but you probably get the idea: *front end (Polymer) <--> Web/REST API server (Go) <---> INFOtransit back end services (REST; Go)"*	
Libraries	*The UI will be developed in Polymer 3.0, and will leverage the following:* ● *Templating library: lit-html* ● *Custom elements base class: LitElement* ● *Dependency Imports/Exports: ES Modules* ● *Package management: npm / yarn* ● *CLI and Build Tools:* ○ *Polymer CLI* ○ *Polymer/polymer-build* ● *Setup/Initialization: Polymer/polymer-starter-kit* ● *PWA accomodations: Polymer/pwa-starter-kit* ● *Component libraries:* ○ *Material-components-web-components* ○ *Google web components* ○ *As-needed 3rd party node packages* ● *Versioning: Git* ● *CSS:* ○ *Utility library: Tailwind* ○ *Framework: postcss* ● *Testing: Polymer Web Component Tester (where applicable to FED)*	Mark
API	*"Jesse also asked me to provide information about the APIs you will use to communicate with the INFOtransit backend. These have not been developed yet, but will be straightforward REST APIs. We may choose to document them using Swagger or something similar."*	Mark
Admin	*"The Jasper front end code will initially work with the INFOtransit back end for Authentication and Authorization. This is similar to what we did with ViM/mSET. This should allow for a seamless migration from the existing INFOtransit solution to the new version. If possible, we should not have to recreate users or roles.* *Go ahead and assume that these APIs will be implemented as per Cinnabar requirements. We (LTG) will take care of providing bridge APIs to the existing INFOtransit backend. Designing the Cinnabar A&A APIs will be a joint effort between our team and yours.* *So the component library he attached can be found **HERE"***	Mark
Content Asset Manager App	"The goal is to hopefully UX/UI/Design & Dev in parallel so that the content flow looks something like..." In order for Jasper to function as designed it is a must have that the Granite - Content Asset Manager Application is UX/UI/Designed and Developed in order for this product (Jasper) to function as designed and developed.	Scott

Administration of Jasper	It is understood that the Final Administration Design and Development for Jasper will take place in another application (Cinnabar) but that all efforts will be made to handle the administration of Jasper internally until the ultimate solution is Designed/Developed	
Post Handoff Consulting	If there is a need after the development of Jasper Phase 3 for additional assistance it will be addressed at that time, billed at T&M	Mark

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9. Appendix

1) AVT & Components Assessment

Summary

Without fully understanding the use or context of the component libraries we were given, the fro nt-end code base looks reasonable and maintainable. There is nothing in here that would throw up a significant red flag or inhibit a new team from coming in to do work on a separate app. It is understood that the LTG team are using relatively new technologies and there are constant shifts and updates happening in the industry at large. After speaking with Mark and his team we are confident that none of the "Negatives" are blockers and will be addressed jointly as a team moving forward.

Positives

1. AVT components are for the most part a good size
2. In general, proper declaration of public/private component properties
3. We are aligned with LTG on all known aspects/questions at this time

Negatives

1. Polymer 2.0 (Less conformity to industry movement than 3.0)
2. Lots of specific (magic) numbers in the CSS that should be relative numbers
3. Unnecessarily mixing and matching a few different css methodologies (BEM, class/id definitions, inconsistent use of variables, global vs scoped css)
4. Some of the components in the /components library are bloated, unwieldy, and should be deconstructed into smaller sub-components (see avt-player.html)
5. Some components could benefit from simplifying the properties by being sent a single object (or for components needing services, dependency injection)
6. No testing present

Discussion / Questions From Jesse Orrico LLC

1. (*NOTE: Questions have been answered by LTG team members and consensus has been reached on all items listed below)
2. Confirm that we're going to be writing these components in Polymer 3.0, or LIT elements.
3. Is theming a consideration for Jasper?

4. How would you recommend we use the same library for multiple apps?
    a. As a package (i.e. npm)? (Recommended for 3.0)
    b. As a Git submodule?
5. What aspects of testing should we be concerned with in the FED?
    a. Accessibility?
    b. Fixture testing?
    c. Perhaps just setting up WCT?
6. Explain what you envision for working together on the component APIs.
7. How are you loading the MD bower_components? Individually or an entire library?
    a. What library?
    b. https://github.com/PolymerElements
8. What's the difference between /components and /avt-components?
9. Are there standards for component size?

Discussion / Questions from LTG (Mark's Team)

1. Responsive design - Build it so most of it is in common so its responsive

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2) Additional Content Provided by LTG

*(*Reviewed by Jesse Orrico LLC)*

Google Elements (YouTube, Google maps..etc)
Some Polymer Elements responsive layout and infinite lists (iron-list? iron-flex-layout?)
Other Polymer Elements: polymer elements not included in the above (app elements? iron ajax?..) "we'll scale back significantly on our own element lineup"

Source:
https://github.com/Polymer/polymer/issues/5240
https://www.polymer-project.org/blog/2018-05-02-roadmap-update.html
https://www.polymer-project.org/blog/2018-05-02-roadmap-faq

Additional Link:
https://github.com/Polymer/polymer-modulizer
https://github.com/Polymer/pwa-starter-kit
https://developers.google.com/web/fundamentals/performance/prpl-pattern/
https://developers.google.com/web/progressive-web-apps/

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3) Estimated list of Components to Develop

- PDF https://drive.google.com/open?id=1FTl-c2xNN-2frwzA29zKFoAmxuyR_FtC
- Real Time https://airtable.com/shrOo0klOdPJXC9JS