

Elicitation Notes

General Techniques

- Interviews - interviewing stakeholders has advantages and imitations.
- Scenarios - provide context to the elicitation of user requirements.
- Prototypes - clarifies ambiguous requirements, provide users with a context where they can better understand what information they need to provide.
- Facilitated meeting - allows a group of people to brainstorm and refine ideas that may be difficult to bring to the surface using interviews. Results in more consistent requirements.
- Observation - software engineers immerse themselves in the environment and observe how users perform their tasks by interaction with each other and with software tools.
- User stories - short, high-level descriptions of required functionality expresses in customer terms.
- Workshops - facilitated sessions with multiple stockholders and formal roles. Encourage stakeholder collaboration.
- Focus groups - representative group of users who participate in a facilitated elicitation activity to generate input and ideas on a product's functional and quality requirements.
- Questionnaires - used to survey large groups of users to understand their needs.
- System interface analysis - independent elicitation technique where you examine the systems that your system connects.
- User interface analysis - independent elicitation technique where you study existing systems to discover user and functional requirements.
- document analysis - examine existing documentation for potential software requirements.

Examples of Stakeholders

- Users - those who will operate the software, involves people with different roles and requirements.
- Customers - those who commissioned the software represent the software's target market.
- Market analysts - when there is no commissioning customer, marketing people are needed to establish what the market needs and act as the customers.
- Regulators - software in regulated domains must comply with requirements of the the regulatory authorities.
- Software Engineers - have an interest in profiting from developing the software.

Identifying Stakeholders

- Brainstorm who the stakeholder are - think of all the people who are affected by your work, who have influence or power over it, or have an interest in it being successful or unsuccessful
- Stakeholders can be organizations and people
- Identify individual stakeholders within organizations
- Must consider all stages of life cycle model when identifying stakeholders. Each stage should have its own list of all stakeholders that have an interest in the future system.
- Lifecycle stages and examples of related stakeholders -
 - Engineering - potential users, marketing division, research and deployment team, standardization body, suppliers, production system, regulator authorities
 - Development o suppliers, design engineering, integration team
 - Transfer for production or for use - quality control, production system, operators
 - Logistics and maintenance - supply chain, support services, trainers
 - Operation - normal users, unexpected users
 - Disposal - operator, certifying body

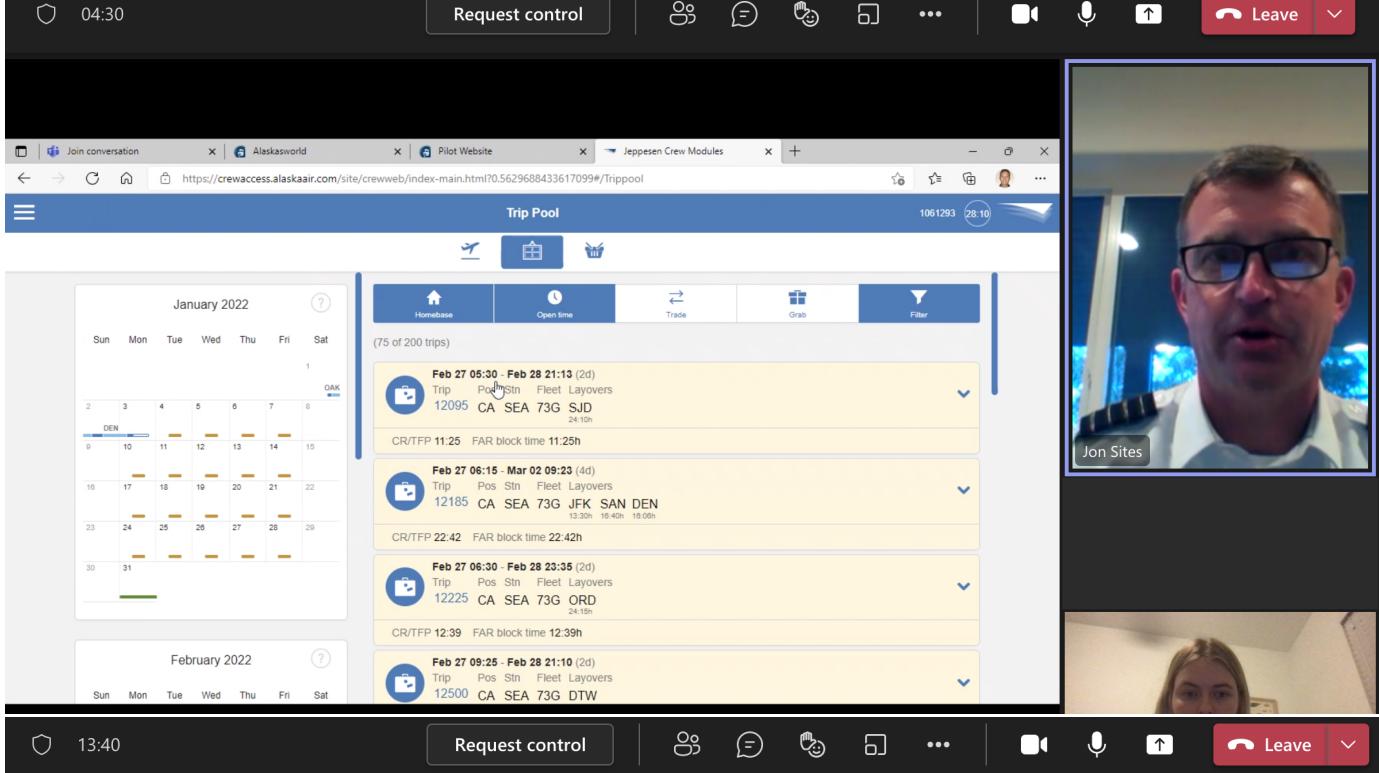
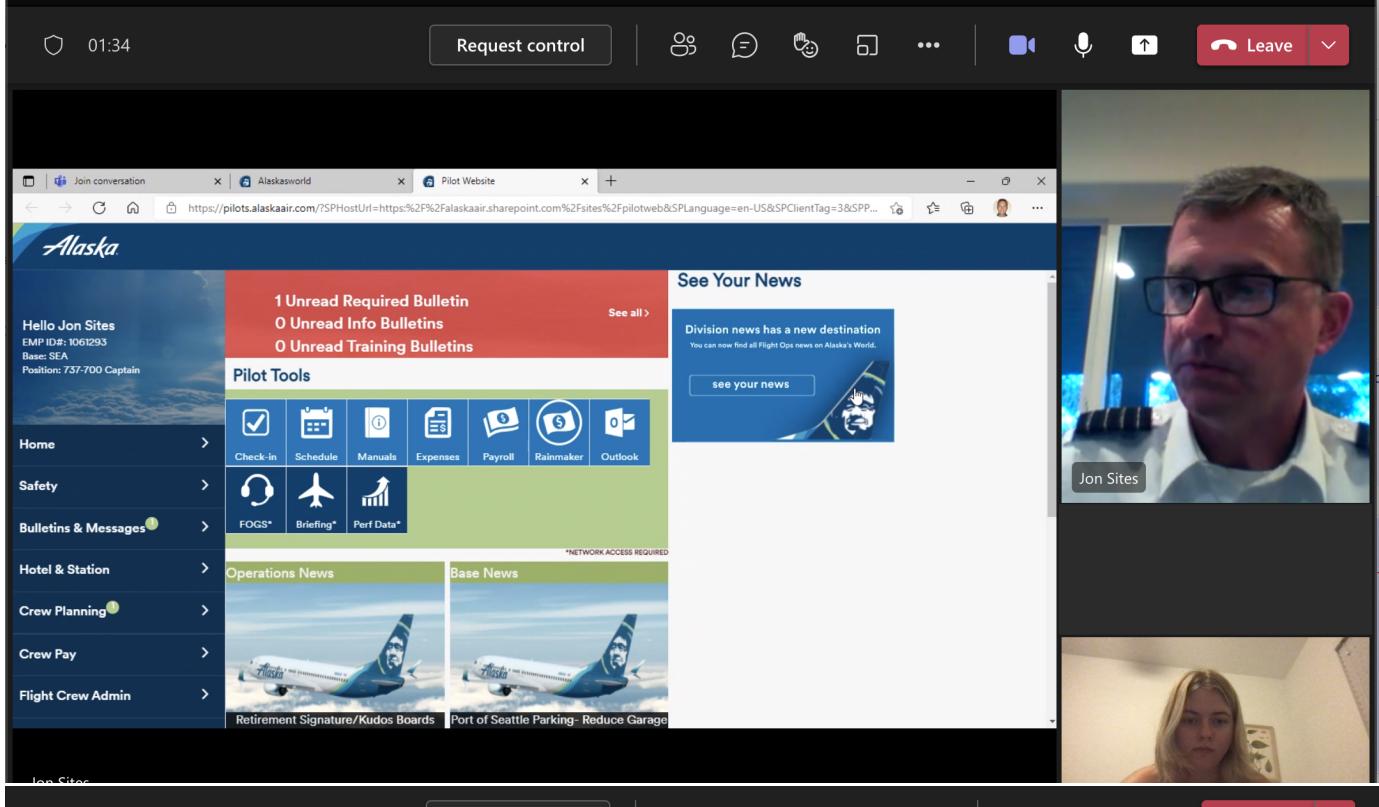
Sources

- Goals - the motivation for the software. Software engineers must assess the value and cost of goals.
- Domain knowledge - provides the background which all elicited requirements knowledge must be based on.
- Stakeholders - Must identify, represent, and mange the viewpoints of each different type of stakeholder.
- Business rules - Statements that define or put constraints on the structure or behavior of the business.
- Operational environment - requirements need to be taken from the environment where the software will be executed.
- Organizational environment - software often supports a business process; selection of the business process may be based on the structure, culture, and internal politics of the organization.

Elicitation Summary

Elicitation Conduction:

- Interview: I interviewed the director of safety at Alaska Airlines to learn more about the problem he is trying to solve and what the project would consist of. Answers to the interview questions I asked are below.
- Observation: I conducted an observation through Microsoft Teams. For the observation I watched the director of Safety at Alaska Airlines navigate the current scheduling portal. I watched as he looked at trading trips, open time, bidding for trips, and his current schedule. I also asked questions about acronyms included in the scheduling portal and parts of the software I did not understand. Conducting the observation allowed me to see parts of the software that could be improved that my sponsor may not think of. Screenshots of the observation are below:



Interview Question Answers:

- What problems are you trying to solve?
 - Safety issues are more prevalent when flying to or from small cities in Alaska than to the lower 48 states. These safety problems could be reduced if only pilots based in Anchorage Alaska were allowed to fly to cities in Alaska because these pilots would have more experience. The problem with implementing this is it is harder to schedule only pilots based in Anchorage to fly these trips because it is a smaller group of pilots and would be more costly. A way to schedule these pilots more efficiently needs to be developed.
- What's the motivation for solving the problem?
 - To improve the safety of flights to Alaska on Alaska Airlines. It would reduce the risk of flying to our highest risk airports.
- What's a successful solution worth?
 - Improves the safety of Alaska Flight Operations which can be measured by safety data including less unstable approaches, less ground proximity warnings, and less long landings.
- Could there be any unintended consequences of the new system?
 - Anchorage pilot group could become complacent while flying to challenging airports because they would be so used to flying to these airports.
- What policies must you conform to?
 - New scheduling policy has to follow scheduling policies in pilot contract, FAA scheduling requirements, and has to be operationally feasible so pilots aren't delaying flights.
- What goals could this product help you achieve?
 - Improved safety metrics including less unstable approaches, less ground proximity warnings, and less long landings.
- What aspects are the most important to you?
 - Improving the safety of the airline by reducing the risk at highest risk airports.
 - Providing pilots with the information and training that allows them to be successful at their job like flying to the same airports more frequently.
- What qualities are critical for the specific parts of the product?
 - Lowering the cost of scheduling pilots
 - Producing a schedule that can be operated on time
 - Producing a schedule that pilots find productive (pilots fly as much as possible)
- How would you judge the product as a success?
 - Based on safety metrics, on time percentage, and cost of operating schedule to airports in Alaska
- Is there anything else I should be asking you?
 - That the problem is very complex and while safety is the number one priority, the cost of operating schedule and desire to make a schedule that pilots want to fly is also important.

Link to User Story Notes:

- [User Stories](#)

User Characteristics

Mockup

Process of creating a mockup:

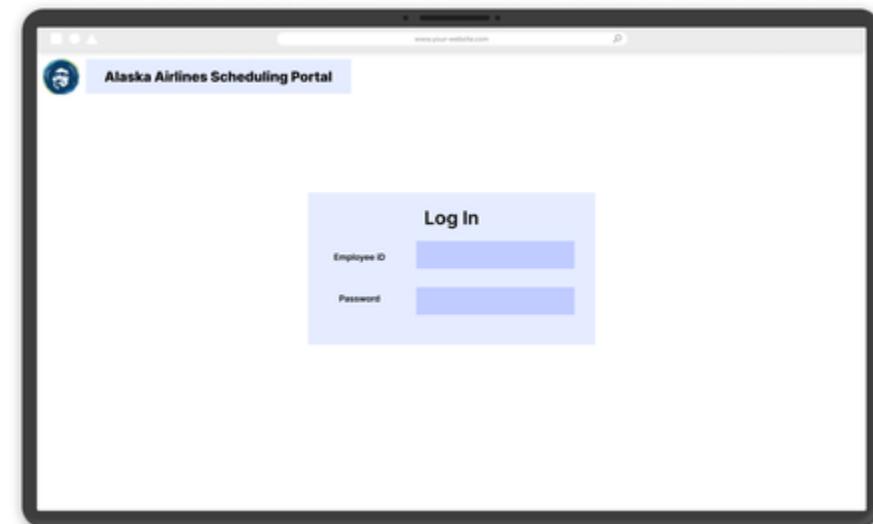
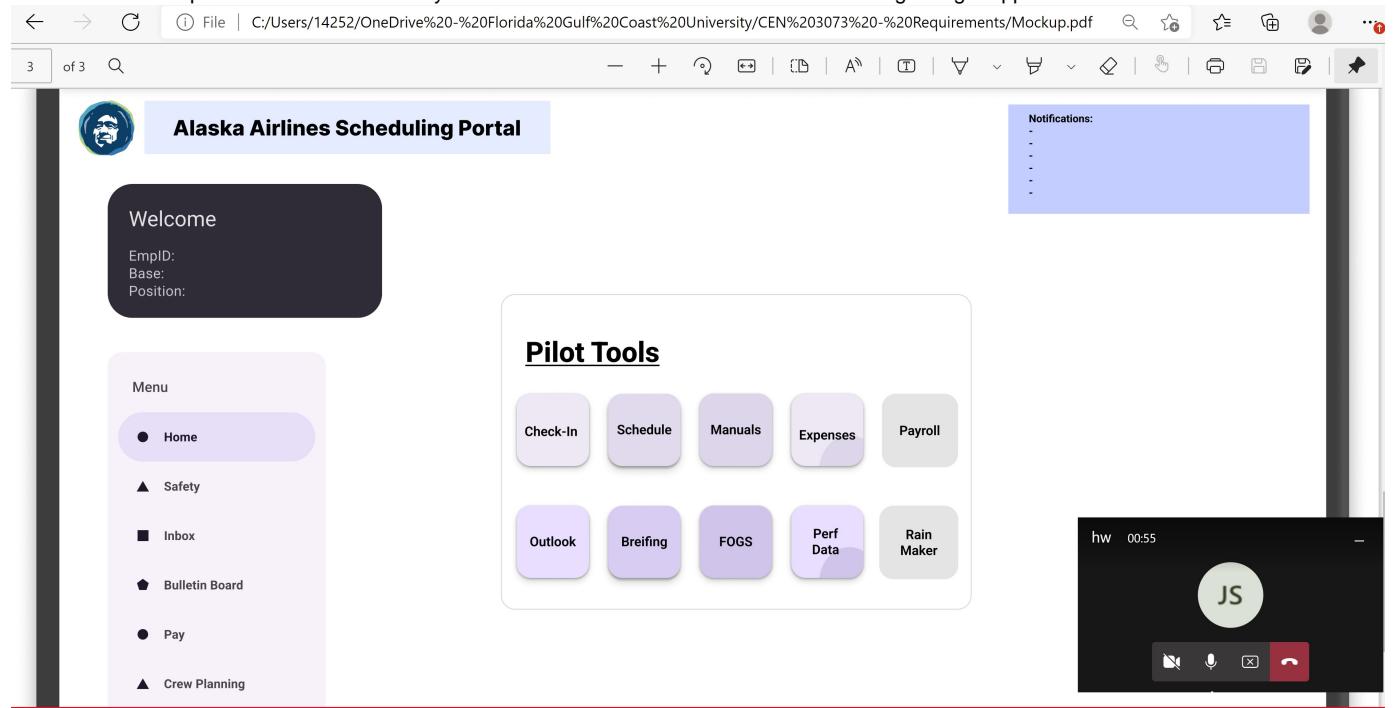
To make the mockup of the Alaska Airlines scheduling portal I used Figma. I utilized Figma community templates to assist me in the building of each mockup. The different pages that I created a mockup for were based off of wireframes that I had previously drawn. I added further descriptions, images, and color to the wireframe to turn it into a mockup.

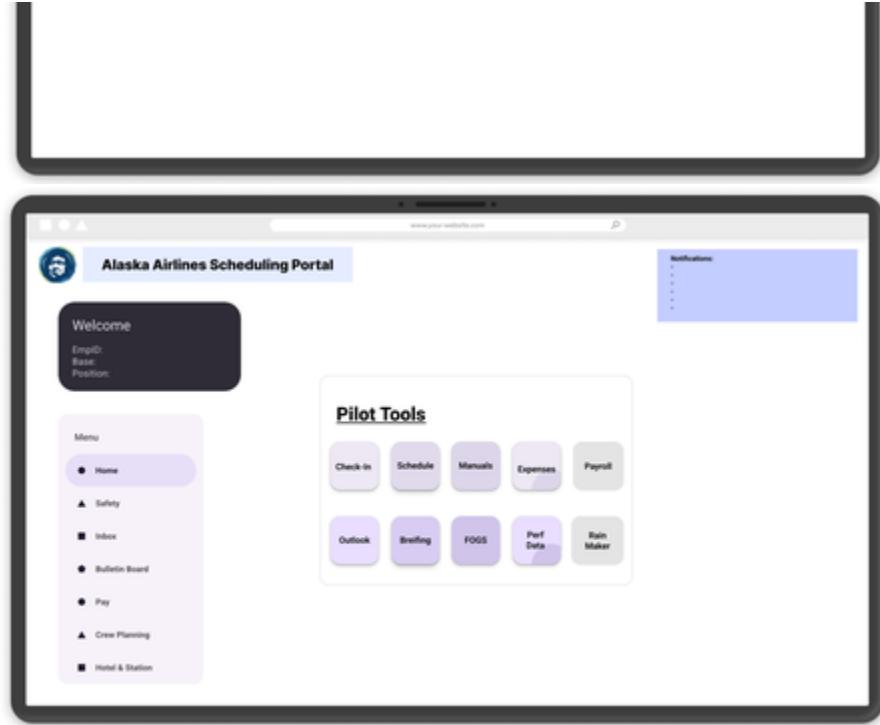
How I used the mockup to elicit requirements:

I utilized the mockup I created to further elicit requirements by showing the mockup to stakeholders. I asked for feedback on the design and layout of the website. I also asked if any pieces seemed to be missing from the mockup. The stakeholders gave me feedback on what to change, move, and add before adding functionality.

Evidence of Sharing Mockup with Stakeholder:

I shared the mockup with the director of safety at Alaska Airlines on a Microsoft Teams meeting and got approval.





Constraints on System Design:

- Design must comply with FAA guidelines
- System design must provide pilots with needed functionality
- System design must be intuitive to learn
- System design must be compatible across devices
- System design must follow Alaska Airlines web design guidelines
- Only secure web browsers can be used to login to the scheduling portal.
- System shall support the number of pilots and flight attendants at Alaska Airlines.
- Development of the scheduling portal shall follow Alaska Airlines design and coding standards.