

MARS 1.0 Usability Testing Report

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Background

MARS is a web-based threat management tool that focuses on streamlining WIM intakes and updates by consolidating data from outside services. It identifies critical cases faster so the team can support individuals in crisis and mitigate targeted violence quickly, accurately and efficiently.

This effort is testing the live MARS site in gamma with the WIM threat management team before launch to identify usability improvements to be made in the UI. Findings will be prioritized and added to the team backlog to be implemented after the 1.0 launch.

Summary

Through the six usability testing sessions with the WIM threat managers, we identified a combination of urgent bugs, usability improvements, and considerations for future development of MARS. The urgent bugs threat managers encountered during some submitting actions were quickly resolved before launch. The usability improvements we identified and assessed for priority included a wide variety of areas and functionality, like interactive search components, iconography and labelling, UI responsiveness, displaying system status, and the data MARS collects and displays. These findings will be reviewed by the development team, and made into user stories that will be added to the MARS product backlog to be implemented before the next major release.



Context

MARS 1.0 ("Mini MARS") is a reduced feature set with the goal of getting the threat managers of the WIM team off of using D3, and using MARS for their day-to-day work. The feature set namely does not include EMT integration, GIP SIM ticketing, and PeopleBus employee status monitoring. The central tasks of threat managers in MARS 1.0 involve logging cases and consultations, tracking updates over time, and running reports over time.

Methodology

These 1 hour recorded usability testing sessions were held in-person or virtual. They consisted of the moderator, Kendra, instructing users to perform tasks in MARS. As users navigate through the website, the moderator asked additional questions and took note of any trouble the users encounter. The MARS product manager, Laura, was also in attendance as an observer. After the sessions, the moderator reviewed session recordings and compiled notes into this report document that will be shared with development team and stakeholders.

Participants

	A	B	C	D	E	F	G
1	Date	Participant	Alias	Title	Format	Notes	Recording *
2	Apr 20, 2022	Jason [REDACTED]	[REDACTED]	Workplace Threat Manager	In-person	Jason - MARS 1.0 Usability Notes	Jason session
3	Apr 20, 2022	Jeff [REDACTED]	[REDACTED]	Workplace Threat Manager	In-person	Jeff - MARS 1.0 Usability Notes	Jeff session
4	Apr 22, 2022	Naomi [REDACTED]	[REDACTED]	Workplace Threat Manager	Virtual	Naomi - MARS 1.0 Usability Notes	Naomi session



5	Apr 25, 2022	George [REDACTED]	[REDACTED]	Workplace Threat Manager	Virtual	George - MARS 1.0 Usability Notes	George session
6	Apr 26, 2022	John [REDACTED]	[REDACTED]	Workplace Threat Manager	Virtual	John - MARS 1.0 Usability Notes	John session
7	Apr 22, 2022	David [REDACTED]	[REDACTED]	Workplace Threat Manager	Virtual	David - MARS 1.0 Usability Notes	David session

* WorkDocs recording links expire Dec 31, 2022

Findings [\(SIM\)](#)

Critical

1) Error white screen when creating case **(2/5 users)** RESOLVED

After filling out a new case form and clicking the Create button, users would be redirected to a white screen. Upon refreshing one user found that the case had been created, and the other user did not.

2) Error linking case to case **(2/2 users)** RESOLVED

Upon saving a case-to-case link in the related tab, after a short loading period, users would be presented with a generic error alert toast message, and were unable complete the linking action.

3) Error saving consultation **(3/3 users)** RESOLVED

After creating a consultation, if users opened the editor and tried saving their changes, they would be presented with a generic error alert toast message. This error prevented them from saving changes to consultations, regardless as to if fields were actually changed.

4) Error saving recommendations **(1/4 users)** Prioritized critical for nature of error, but not a consistent issue



Most likely an anomaly; one user was presented with an error alert toast message when clicking Save in the recommendations tab. This user had intermittent Internet connection issues, which this problem could be attributed to.

5) Error bookmarking case **(1/5 users)** Prioritized critical for nature of error, but not a consistent issue

Most likely an anomaly; one user would click the "Bookmark case" button in a case, and after a short loading period of the button being disabled, would revert back to an enabled button, indicating that the case was unsuccessful in being bookmarked. The case did not appear in the user's Bookmarked cases list. This user had intermittent Internet connection issues, which this problem could be attributed to.

High

1) Person search component **(6/6 users)** [\(SIM\)](#)

All users had at least one struggle in using the person alias/name search component. Since the label and placeholder for this component throughout MARS pages is "Alias" and "Search for alias...", users were unaware that you could search for someone by name. This would be useful as multiple users noted that they may not easily know someone's alias. After selecting a person in the Alias field, the delay in populating the other Name/Title/etc. fields was confusing to most users, and led them to start manually filling out the other fields. We should have some visual loading animation to indicate that the system is working to populate the other fields. For a few of the users, they encountered problems selecting people with common names like "John Green" because of the small size of the select dropdown component, which only displays the top 5 results. Another user tried to search himself using "jhans", but the result list did not contain his user, since "jhans" is a prefix of many other people's names and aliases.

- Loading animation etc. for field population delay [\(SIM\)](#)
- Sizing of result dropdown larger [\(SIM\)](#)
 - Slightly larger height
 - Possibly better search algorithm
 - Some rational number of results (30-40? depending on load time) or possibly infinite scroll / "see more" (reference meetings.amazon.com)
 - Have some helpful message for failed searches?
- Labelling/placeholder change - "Search" or "Search person/employee" as label [\(SIM\)](#)



- After typing alias and clicking off component without selecting, delete typed alias - reinforce that they didn't select a dropdown option [\(SIM\)](#)

2) Acknowledging updates (5/5 users) [\(SIM\)](#)

For the 5 users that explored the update acknowledgment functionality, all had trouble fully understanding and performing the action. The checkmark and exclamation icons were hard for users to distinguish, and if they were clickable buttons or not. The blue coloring used for emphasis in the update thread was not fully understood that it indicates an update needs acknowledgment. Since there was no text explanation or confirmation for the acknowledgement action, it was unclear what the action did or if it was successfully received by the system. The positioning of the checkmark acknowledge button was not correct when users viewed MARS in Firefox.

There were also bugs in that acknowledging an update did not immediately update the badge numbers, and for users that switched tabs, the update did not save as acknowledged. Considerations came up for if users need to acknowledge their own LOC updates that they made, and the concern of manual effort of acknowledging every relevant update.

- Better system status: loading animation and toast confirmation after click [\(SIM\)](#)
- Update case Update tab badge number & Updated Cases list badge number, retain acknowledgment after viewing different case tabs [\(SIM\)](#)
- Improve explanation of acknowledgement button - html title "Acknowledge update" etc. [\(SIM\)](#)
- Firefox weirdness: acknowledgment button positioning [\(SIM\)](#)
- Revisit LOC acknowledgment requirement

3) Level of concern functionality (4/5 users) [\(SIM\)](#)

Most users had trouble finding where they can change a case's level of concern. The LOC circle component doesn't appear clickable, and many users didn't think to look there first to change LOC. There's opportunity to adjust the component to increase clickability, or to move/add the functionality to another location on a case page. Most users gravitated toward the LOC graph and seemed to like the visual tracking over time. One user, too, suggested enhancements to this graph to link out inflection points to their associated updates, or include popovers of additional information to help understand the entire story of the case. The functionality of changing LOC could also be included in this area.

- LOC graph enhancements [\(SIM\)](#)
 - graph can be larger to accommodate popovers



- integrate LOC circle edit component into graph modal
- inflection points: link out to respective update thread entries, on hover have a popover component with day/time/user/notes (link out only for loc changes with notes)/etc.
- Improve clickability of LOC circle: html title "Edit level of concern", smoother hover transition, etc. [\(SIM\)](#)

4) Dashboard red icon **(3/6 users)** [\(SIM\)](#)

Many of the users did not immediately understand the red exclamation icon next to the dashboard side menu link. Because of the exclamation point's small and thin size, it was not very readable to users. It also wasn't clear what the icon referred to, with users thinking it indicated the current page, something critical, etc. There might be an opportunity here to incorporate toast notifications to coincide with the red icon for in-the-moment notification and clearer correlation.

- Change red circle to number badge like the other two lists: Meridian badge, type=error, when no cases on dashboard -> no badge, update number in-the-moment [\(SIM\)](#)
- Side menu width to fit badge numbers of 3 digits [\(SIM\)](#)
- Possible enhancement for in-the-moment notification toasts to accompany badge changes (LOW) [\(SIM\)](#)

5) Flagged words coloring **(2/6 users)** **RESOLVED**

One user has a form of colorblindness, and struggled to distinguish the orange color of flagged word text vs. black body text. Another user couldn't distinguish between the orange color of flagged word text, and the red color used in Critical level of concern components, leading them to incorrectly correlate the two elements.

6) Shared bookmarks **(2/2 users)**

One of the users brought up an important topic around the shared responsibility between the threat managers of the WIM team. They suggested an area of some sort of 'shared bookmarks' or currently active cases the team should be aware of. This was echoed in the next user, who noted they would like to easily see what cases are "tracking and trending" at any given time. The main use case for shared bookmarks is better handoff and awareness between the threat managers, especially during shift changes or responsibility handoffs.

- Pending convo for feature request



Moderate

1) Assigned to me / Bookmarked case lists **(3/4 users)** RESOLVED

For most users, after assigning a case to themselves or bookmarking a case, the cases would not appear in those respective lists until the users refreshed the page. It seems the system does not immediately register the actions of assigning and bookmarking.

2) Consultation time of event vs time of contact **(4/6 users)**

A few users noted that though the time of event that we currently collect in consultations is useful for tracking and metrics, the actual time that a loss prevention individual contacts them could be up to a few days after the actual event. There is an opportunity here to add a "time of contact" field, auto-filling to the current date/time to expedite the form. These times would be more reflective of reports on day-to-day threat management work than time of event.

- Pending discussion with stakeholders

3) More robust person data **(2/3 users)**

Some users who reviewed person data indicated that some helpful information is not included in the current data we present, especially for POIs. This information suggested includes date of birth, personal address, emergency contacts, and (partial) social security number. This would be dependent on security and HR considerations. There was also a suggestion to list tenure in both 'years/months/days' and 'days' formats, as 'years/months/days' is more human-readable, but one user had previously found 'days' helpful for generating a mathematical report.

- Display time format options: 'years, months, days' and 'days' (LOW)
- Continuous discussion with stakeholders
 - Option: have users explicitly click "Request x information" to see x info (so we don't store it in MARS)
- Issues with data on people outside of Amazon?

4) Search by LP contact **(2/3 users)**

Most users who covered the advanced search / reporting sections quickly noted that it would be very helpful to have the option to search by a case's LP contact. Many of the threat managers have strong relationships with onsite loss prevention individuals, and



associate cases with certain loss prevention contacts. MARS currently has the ability to search by POI/victim/witness/contact, but not specifically the LP contact section of a case.

- ` Search by LP contact field in advanced search & reporting [\(SIM\)](#)

5) Sheet responsiveness (**3/6 users**) [\(SIM\)](#)

For small screens, consultation and person sheets appear offscreen on the right side and require users to horizontally scroll to view the entire sheet, often missing the x and edit buttons on the right side of the sheet. One user's workflow led them to open a consultation to the right of a person sheet, which made the screen overflow. To limit the risk of two sheets being onscreen at the same time, we should only allow one sheet to be open at one time. One user also noted that they would expect a person sheet to be automatically closed when they leave a case page, instead of the current behavior which retains person sheets indefinitely as the user browses MARS. One user expressed concern that the width of the consultation sheet could be too small to be readable for long summary texts. A possible solution could be allowing the user to manually resize the width of a sheet, or auto-adjust width as screen space allows. From another user's observation, there could also be more clear sheet opening animation when switching between open person sheets.

- Auto-close sheets to only allow 1 at a time: when leaving a case details page, auto-close any person sheet, other scenarios [\(SIM\)](#)
- Possible manual resizing of consultation sheets for readability: user ability to click and drag to resize wider, sheet changes to overlay type to not interfere with content [\(SIM\)](#)
- Better transition between person/consultation(?) sheets to indicate stuff has changed: 1. Re-animate sheet slide 2. Faux circle loading animation 3. Others? [\(SIM\)](#)
- Website responsiveness for smaller window sizes (split screen etc.) [\(SIM\)](#)

6) Consultation titles (**3/6 users**)

After asking users what titling conventions they use, it seems that the space allotted for titles in each consultation listing could be too small to accommodate the long title conventions, causing the titles to truncate. Besides decreasing the text size, a consideration is to display some pieces of information threat managers usually include in the title, like facility code and date, as their own data points in the consultation listing component. A concern was brought up by a few users that with custom consultation titles, over time, there is a possibility that duplicates will occur. Duplicates currently are an issue for users in D3. We should consider having a unique



id instead or in addition to a title for each consultation, or auto-generating a human readable title.

- [pending] System auto-generate consultation titles based on TM's established titling convention - might wait until EMT to see how TMs are using consultations & further discussion to see if this is still valid [\(SIM\)](#)
 - DATE-SITE-TYPE-MARS NUMBER(?)-LP CONTACT(?)
 - Depending on title sizes, make text size smaller and truncate title in consultation cards

7) Update thread sorting **(1/1 users)**

One user encountered a bug where after choosing to sort by their preferred Oldest to Newest order, and then adding an update or changing LOC, it reverted the sorting back to the default Newest to Oldest. We should instead save their preferred sorting selection for a given user session or case view.

- Bug: choosing between oldest & newest, system reverts order after 1. adding an update/loc change 2. switching case tabs [\(SIM\)](#)

8) Generating report usability **(1/1 users)** [\(SIM\)](#)

One user covered the action of generating a report in MARS. When they attempted to generate without specifying a date, there was no alert message toast to inform them that there were missing fields. Then once filling out the date inputs and clicking generate, the red field outline and message did not get removed, confusing the user. After the click, there was no system response to indicate the system was generating a report, causing the user to click the button again. After a long pause, the two reports were downloaded through the browser. There should be a visual loading animation to indicate the system is working during this time.

- Alert toast message when generating report without filling out date fields, and remove once user fixes [\(SIM\)](#)
- Loading animation when generating report - working in live prototype [\(SIM\)](#)

9) Opening date picker with small screen **(1/6 users)** related to web responsiveness, has workaround

One user with a small laptop screen was unable to operate the date picker arrows as a portion of the interactive popover was cut off by the top of the window. This was an issue in the advanced search and reporting pages since the date picker was placed at the top of the page.



10) HTML titles for accessibility, error prevention **(1/6 users)**

A suggestion from one of the users was around the html titling of clickable elements throughout MARS. Since the user wasn't completely sure what the plus icon buttons did on the case pages, he tried to hover over them to see if they would have a textual explanation as to their action. We can improve accessibility, usability, and prevent user errors throughout MARS with more explicit html titles for interactive elements, especially icon-only buttons.

- HTML titling for clickable elements, especially icon-only buttons [\(SIM\)](#)

Low

1) "Reported by" field vs LP contact **(5/6 users)**

In the case creation form, users tend to not notice the disabled "Reported by" input, and be mildly confused as to what it means. Most users were unsure if this would be themselves, onsite associates, or LP contacts. Some users noted that this person would usually be the "LP contact" of a case, so there's a possibility to auto-fill the "LP contact" section of a created case. A few users questioned why "Reported by" was a required field, as some cases might not have a specific reporting party. We currently include this field to be in parity with EMT 1.0 which currently collects a "Reported by" person role, but we should re-evaluate if this data point is necessary to keep in MARS. In addition, one user was concerned that the LP contact only displays a single person. There is an enhancement opportunity here to display 'backups,' either that person's manager, team, etc. for times where that specific LP person is not on duty or available for contact.

EMT 2.0: "Reporting party" can be internal or external - keep in MARS, required

- Consider different formatting for reporting party field in create/edit case form (LOW) [\(SIM\)](#)
- Link out to AdminDirectory for LP contact [\(SIM\)](#)
- Link to LP Oncall schedule if filled out in FacMan in LP ON-CALL (Security tab) in LP contact box [\(SIM\)](#)
- Contacts: link to FacMan EMERGENCY/ GOVERNMENT CONTACTS (Site Management tab) [\(SIM\)](#)

2) Bookmarked cases on Dashboard **(3/4 users)**



A high percentage of users that were tasked with finding their bookmarked cases thought to initially look at the Dashboard page. After a short time exploring the different pages, the users were eventually able to find their Bookmarked cases list, but since their first thought was of the Dashboard, there's opportunity to incorporate some bookmarks or shared bookmarks in a more visible place like the Dashboard.

3) Facility code select **(3/6 users)**

Half the users had some stumbles using the facility code select component. After typing a facility code, some users forgot to manually select it from the dropdown list, which led to their typing not saving in the input. If it is possible, there can be an option to allow users to simply type a facility code for it to register, especially since there is a delay in loading time for the dropdown list to populate. A few users also felt compelled to type facility codes in all-caps for their search to be valid, which is unnecessary. This behavior might be informed by other systems that require capitalization for facility codes.

4) Summary tab **(3/6 users)** [\(SIM\)](#)

Some users were slow to navigate to the Summary tab to find the original narrative and basic information about a case, since it is placed second as a tab. It is possible that users tend to skim over the tab section or don't recognize the elements as tabs. There is an opportunity to change vocabulary of "Summary" or "Event summary" to "Narrative" or "Event narrative," as that's a term all users commonly refer to for the original text description of the case.

- Change "Summary" tab to "Event" [\(SIM\)](#)
- Change "Event summary" in summary tab to "Narrative" to match EMT vocabulary, possibly include the multiple narrative sections (Narratives: Narrative, Conference Calls) (pending discussion) [\(SIM\)](#)

5) Filter order **(2/4 users)**

A few users suggested that for the advanced search and reporting pages, it might be more helpful to position the most commonly used or possibly "favorite" filters at the top of the page, to save users time in combing through the other unnecessary filters. The users were also mixed in how they read through the filters, some reading row-wise, and some reading column-wise.

- Track usage of filters in advanced search & reporting - dev story [\(SIM\)](#)

6) Long create case form experience **(2/6 users)**



Because of one user's poor internet connection and the noted bug when creating cases, there was a consideration that came up around how we can improve the experience of filling out the create case form while interruptions or errors could occur. This is the longest form within MARS, and it is disheartening to users when all their efforts filling it out are lost due to an error or lapse of time. We should carefully consider how we save their inputted information or other effort so that their work isn't unexpectedly lost.

- Break form into sections? Pending discussion

7) AdminDirectory new tab **(1/1 users)**

One user who opened a person through the AdminDirectory link would prefer it to open in a new tab to maintain their current workflow in the MARS webpage.

- Open AdminDirectory in new tab [\(SIM\)](#)

8) Primary/secondary facility in advanced search/reporting **(1/1 users)**

The one user who filled out the facility input in the advanced search page had a moment of confusion when they saw that the Primary and Secondary checkboxes were unchecked. He was unsure how the search would work if they're both unchecked, and if he had to manually check them both. It would make more sense to users to start off having both of these options selected, it will more clearly indicate the search is including both options.

- Start off with Primary / Secondary unchecked [\(SIM\)](#)

9) Case type report column **(1/1 users)** RESOLVED

The one user that downloaded and viewed a report noted that they would like to see a column that displays each case's type or some other data point to briefly explain what each case is about

10) Require country/region in offsite **(1/1 users)**

One user suggested for offsite addresses to require region and/or country in order to improve the completeness of data when a user creates a case. They noted that although they may not always have the exact street address or zip code, users would assumably be able to know the country and region. This was found when creating a case, but also applies to consultations.

- Possibly require country/region - pending discussion with stakeholders



11) Recommendation fill-in notes (1/4 users)

Most users understood that the ellipses in each recommendation note indicated that it was a 'fill-in' area, but there could be an opportunity to better present or structure the fill-in areas to make it more understandable and efficient.

12) Recommendations save (1/5 users)

It was noticed that one user seemed to forget that the Save button was at the bottom of the Recommendations tab. As users check more recommendations, it pushes the Save and Cancel buttons farther down the page. This risks users forgetting to scroll down and press the save button. We should include an "unsaved changes" modal to prevent user error, or auto-save as users select and type.

- Auto-save recommendations ([SIM](#))

13) Dark mode (1/6 users)

Since one user had dark mode set in multiple applications because it's "easier on the eyes," we have at least one use case where a user could prefer to have a dark mode option. This could be a future enhancement for MARS to improve user experience.

14) Rich text editors (1/6 users)

One user questioned whether free-text fields could handle bullet points, since they noted another threat manager commonly structured their texts using bullet points and that D3 currently doesn't allow it. Although MARS can handle special characters like bullet points, it doesn't have complex structuring capability. A possible consideration for the future could be the implementation of rich text editors so users can structure and format their free text for clarity.

- Pending needs discussion, reference meetings.amazon.com

Considerations

- Continuously improve latency for low internet connectivity

As we further develop MARS features and deal with increasing amounts of data, developers should continuously look to ways that we can improve loading times throughout MARS. In some sessions, there were loading times long enough to cause confusion for users, as well as issues with low connectivity of their own devices. With



many of the threat managers needing to travel for work, they won't always have access to quality internet.

- EMT incident categorization

Most threat managers were surprised and concerned with the new CTI structure for categorizing incidents as proposed in EMT 2.0, which we would follow in MARS. Users were advised to discuss internally within the WIM team to ensure the categories reflect the needs and work of the threat managers.

- LOC definitions and descriptions

Jeff, one of the user threat managers noted that he has submitted a paper with adjustments to the level of concern definitions of Low, Moderate, High, and Critical, as well as their descriptions. It has yet to be approved, but we should be aware of this potential change we would need to make in MARS in the future.

- Receiving LP updates

A note taken from one of the sessions was a question regarding if threat managers would be able to see updates from onsite loss prevention after the initial CMS report was submitted, commonly interviews. This is tied with a larger topic of how to integrate with EMT and CMS so that threat managers have easy visibility into all relevant information surrounding a case. CMS integration also may be solved in a future state of LP reporting directly into EMT 2.0.

Appendix

MARS 1.0 usability testing signup sheet: [\(Mini\) MARS Usability Testing](#)

MARS 1.0 usability testing plan: [MARS 1.0 Usability Testing Plan](#)

Prior prototype usability study report: [MARS Prototype Usability Study Report](#)

