

## CW AND HE ISSUES IN THE ABSHER MOBILE APP [69]

Pictures (Pic) link: <https://figshare.com/s/1b35200563e19ab2197d?file=43432119>

UX Aspect	Attribute	Issue Description	Issue ID	Severity	Frequency	Feature Affected in App	Pic
Usability	Effectiveness	Critical services and related instructions were displayed in Arabic in the English interface.	CW1	3	1	Appointments → New Appointment → Select Services (Civil Affairs & Passports service lists show mixed Arabic/English in English UI).	AppCW 8.1, AppCW 21.1
Usability	Efficiency	The main information in the interface is not shown within the current view, instead, the user must scroll down to find it.	CW2	1	1	Sponsorees → Actions list (Issue Visa / Renew Iqama / Request Muqeem Print / Update Passport information / Release Sponsorship / Register as Absent) — key content and actions extend beyond the initial viewport, requiring scrolling.	AppCW13.1
Usability	Learnability	Inexpressive labels/icons that may prevent the user from identifying the next correct action and associate it with the wanted effect.	CW3	2	5	Settings → Language section (unclear affordance); My Services → service list (icons like Digital Cards, Deliver Family Card, Renew Passport/License not expressive).	AppCW2.2, AppCW2.1
Usability	Learnability	Inexpressive or lack of informative error messages that can help the user to identify the next correct action.	CW4	4	2	Renew Iqama and Issue Exit Re-entry Visa (New Visa) — “Cannot Proceed” screens state insufficient funds but provide no actionable path (e.g., pay link, amount due, steps).	AppCW12.1, AppCW11.1
Usability	Memorability	The required navigation to reach the needed service may not match the user’s mental model.	CW5	2	6	My Services hub (top-level IA & grouping/labels such as Digital Cards, Deliver Family Card, Renew Electronic Passport, Renew Driving License may not match where users expect these tasks to live, causing navigation mismatch).	AppCW2.1
Usability	Satisfaction	Actions that must be taken to achieve the task do not match the user’s mental model.	CW6	3	4	Renew Iqama → unexpected error before completing required steps; Sponsorees → action list not indicating prerequisites (e.g., payment first).	AppCW11.1 ApCW13.1
Usability	Satisfaction	The calendar in the book an appointment task shows all days of the month including days with no available appointments and weekends, causing the user to scroll through all the days to find the nearest available appointment.	CW7	2	3	Appointments → New Appointment → Choose date & time — calendar shows all days (including unavailable/weekend), forcing manual scan.	AppCW24.1

UX Aspect	Attribute	Issue Description	Issue ID	Severity	Frequency	Feature Affected in App	Pic	Similar Issues Across CW
Usability	Effectiveness	The language is not compatible with the selected language, and several services are not grammatically correct.	-	3	1	—	—	Same as CW1, so it's ignored.
Usability	Effectiveness	When filtering the cases to donate in Furijat, the Nationality cannot be changed back to optional after selecting one.	HE1	2	1	Furijat → Search Cases → Filter → Nationality (Optional) — once a nationality is chosen (e.g., “Sudan”), there’s no way to clear it back to Optional/None.	AppHE 25.3	-
Usability	Effectiveness	Display some information/instructions inconsistently with the selected language which may hinder the	-	3	3	—	—	Same as CW1, so it's ignored.

		completion of the service successfully.				
Usability	Effectiveness	Providing error message with code number.	HE2	2	1	Renew Iqama → error screen — blocking “Cannot Proceed” message shows code AC3843E instead of an actionable explanation/next step My Services → Missing Documents → Request Document Replacement → Choose Missing Document → Choose Branch (replacement requests spread across flows; users expect one consolidated “Missing Documents” hub) Settings → View My Account Details → Edit Details on Web (task cannot be completed inside the app). Issue Travel Permit → excessive/irrelevant details shown before action steps; Renew Iqama → additional non-essential information displayed, distracting from main renewal task.
Usability	Efficiency	The user may expect to be able to request all missing national documents from the same tab.	HE3	3	1	—
Usability	Efficiency	The user cannot complete the task through the mobile application and must be transferred to the website such as updating user information.	HE4	3	1	—
Usability	Efficiency	Showing unnecessary /unrelated information.	HE5	1	2	—
Usability	Efficiency	The user needs to scroll down through a lot of information to reach the needed information such as Iqama expiry date.	HE6	1	1	Sponsorees → Query Iqama Expiry Service (Iqama information placed below the fold, requiring unnecessary scrolling).
Usability	Error	The application directly accepts the entered verification code once the user enters 4 digits without allowing the user to make changes in case of a mistake.	HE7	1	1	Login → Enter ID & Password → Enter Confirmation Code (OTP) — OTP auto-submits on the 4th digit; user can't review/correct before submission. Furijat → Search Cases → Gender (Optional) — control allows selecting both Male and Female at once; for a single choice it should be radios (one active) rather than multi-select checkmarks.
Usability	Error	Using components that are not compatible with the intended action.	HE8	1	1	AppHE 25.4
Usability	Error	The user can choose to issue the travel permit against a national ID for young kids under 18 years, while the provided error message after completing the request does not clarify the reason for not issuing the permit.	HE9	2	1	My Family → Issue Travel Permit (unclear error when issuing permit for ineligible family member). AppHE 6.5
Usability	Error	No help tab is provided.	HE10	3	3	Missing Help/FAQ across key flows—Travel Records, Update My Account (web handoff), and Manage Appointments → Renew National ID.
Usability	Learnability	Using icons that might not be familiar for novice users.	-	1	1	—
Usability	Learnability	Some active tabs/ buttons are displayed in grey which gives the impression that it is disabled and incompatible with standards	HE11	1	1	Launch screen → primary actions (Log In, Digital Cards, More)— low-contrast/grey styling over photo background makes active buttons look disabled. AppHE 1.4

Usability	Learnability	Unexpressive labels/icons may prevent the user from identifying the next correct action and associate it with the wanted effect.	-	2	2	—	—	Same as CW3, so it's ignored.
Usability	Learnability	No error message is provided when making a mistake.	HE12	3	1	My Services → Book a Passports Appointment (invalid or incomplete inputs sometimes produce no error feedback, leaving user unsure of the issue).	—	-
Usability	Learnability	Important information is hidden and not shown directly to the user	HE13	4	2	Sponsorees → Renew Iqama (critical details—fees, conditions, eligibility, violations—are not visible upfront and require scrolling or only appear after failure).	—	-
Usability	Learnability	Providing uninformative error messages	-	4	2	—	—	Same as CW4, so it's ignored.
Usability	Learnability	Using different words for the same required action in the error message may confuse the user.	HE14	1	1	My Services → Missing Documents → Choose document — modal text says “register the National Identity Card as missing” while the action button says “Report Document as Missing” (register vs report = inconsistent terminology).	AppHE 22.9, AppHE 22.9.2	-
Usability	Memorability	The position of some buttons is not compatible with other interfaces and standards.	HE15	2	4	Renew Driving License → Exit Service dialog has inconsistent navigation button placement; My Appointments → Civil Affairs Appointment screen header layout inconsistent with other screens	AppHE 8.2-4, AppHE 16.4	-
Usability	Satisfaction	When the user press “Agree on using the photo” when renew a passport he may expect that the photo will be displayed in the same interface.	HE16	2	1	Renew E-Passport → Review & Acceptance (photo not shown before user is required to “accept the photo”).	AppHE 3.2	-
Usability	Satisfaction	When choosing the appointment date, the calendar shows the days starting from the current day although there are no available appointments soon.	HE17	2	2	Manage Appointments → Book New Appointment → Choose date & time — calendar highlights current/near days with No Appointments Available, forcing extra scrolling to reach the first available slot	AppHE 21.7	-
Usability	Satisfaction	Settings interface includes several unrelated features such as, application language, calendar, notifications. In addition to user account details.	HE18	2	1	Settings → View My Account Details — entry mixes account/profile with app-level settings; editing profile then sends user to Edit Details on Web instead of a focused “Account” area.	—	-

## CW AND HE ISSUES IN THE AGILE SPM TOOL [70]

Pictures (Pic) link: <https://github.com/PaperAppendices/Appendices/blob/1bcc221d563a2508c522a55b1942491558593e6>

UX Aspect	Attribute	Issue Description	Issue ID	Severity	Frequency	Feature Affected in App	Pic	Duplication
Usability	Efficiency	The user will be expecting that the left side panel is fixed.	CW1	2	3	Left sidebar while: changing task priority, creating/editing sprints, and opening burndown reports — sidebar doesn't persist after returning from Project Settings. Creating/Editing sprints → Backlog → Create Sprint (after enabling Sprints in Project Settings, pressing Create Sprint gives no confirmation or visible new sprint).	-	-
Usability	Efficiency	No feedback was provided after pressing on 'Create Sprint' button.	CW2	2	1	Creating/Editing sprints → Backlog → Create Sprint (after enabling Sprints in Project Settings, pressing Create Sprint gives no confirmation or visible new sprint).	-	-
Usability	Error	Incorrect feedback on the email format.	CW3	4	1	People → Invite a teammate → Email field (adding a member to a workspace; error message gives wrong/unclear validation).	-	-
Usability	Learnability	Missing buttons for adding, editing or saving.	CW4	3	2	Creating a user story: inline story field saves only when pressing Enter and has no Save/Cancel controls or hint. Creating/Editing sprints: "Edit Sprint" is hidden behind an indirect link instead of a clear edit button.	-	-
Usability	Learnability	Displaying a clickable text as plain text, which will confuse the user.	CW5	3	2	Backlog → Story row → story title ("Story1"). The title looks like normal text and only reveals itself as a link on hover; users may not realize it's the affordance to open/edit story details.	Pic3.8.5	-
Usability	Learnability	Inexpressive labels/metaphors that can help the user to identify the next correct action and associate it with the wanted effect.	CW6	3	4	People isn't obvious for inviting members; Issue type control isn't clear for changing types; Priority buried under Issue settings; adding comments requires clicking a story/task name that looks like plain text.	Pic2.8.1 P7.4	-
Usability	Learnability	Lack of informative messages to the user to clarify the next action the user must take to complete the current action. For example, that enter must be pressed to add a new item.	CW7	2	1	Creating a user story → Backlog → Create issue inline field saves only on Enter; clarify next action via a small tooltip ("Press Enter to add") or standard Save / Cancel buttons.	Pic3.8.5	-
Usability	Learnability	The user may not expect to click on the story name which is displayed as a hyperlink to change story information.		3	2	-	-	Same as CW5, so it's ignored.
Usability	Learnability	Displaying hyperlinks as unclickable text, which the user may not expect to click on it.		2	3	-	-	Same as CW5, so it's ignored.
Usability	Satisfaction	The user may expect that main features are provided within the main menus by	CW8	3	4	Priority: Project settings → Issue types → Priority is hidden under Issue type; user expects a direct Priority option in the	-	-

default. Such as, priority feature, sprints, and releases.

main/backlog UI.  
 Releases/Versions: Project settings → Features → must enable Releases before using Releases → Create version (expected on by default).  
 Burndown Reports: Project settings → Features → must enable Reports before Reports → Sprint burndown chart (expected on by default).

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UX Aspect	Attribute	Issue Description	Issue ID	Severity	Frequency	Feature Affected in App	Pic	Similar Issues Across CW
Usability	Efficiency	No feedback ensuring that the sprint was created successfully.	-	2	1			Same as CW2, so it's ignored.
Usability	Efficiency	Too many steps are needed to activate the priority for each project.	HE1	4	1	Project settings → Issue types → select each type → Edit fields → Add field → Priority → Save → back to Backlog/Board → open issue → set Priority.	Pic5.4.2	
Usability	Efficiency	Too many steps are needed to enable the feature.	HE2	3	3	Project settings → Features — enable Sprints , Releases/Versions , and Reports, then navigate back to Backlog/Board to use them; each capability must be toggled separately.	-	
Usability	Efficiency	Too much text is displayed to provide basic information needed only by beginners in agile project management.	HE3	1	1	Create a project (Task 1) → Select template → Scrum — template details panel shows long explanatory sections (backlog, sprints, velocity) that dominate the dialog and slow expert users; concise copy or collapsible help would suffice.	Pic 1.8.1	
Usability	Efficiency	Providing unneeded option (Adding the options for changing the template and type are not needed at adding the project details window). There is no need for the "Create" button because the functionality for creating a story is already provided under the project	HE4	2	1	Create project → Add project details — right sidebar shows Change template and Change type controls even though the template/type were already selected in the previous step; they add clutter without aiding this form.	Pic 1.8.2 P14.8	
Usability	Efficiency		HE5	3	1	Backlog — the global Create button (top navbar) duplicates the inline Create issue composer in the backlog panel; two entry points for the same action add redundancy and choice overload.	Pic 3.8.1	

Usability	Efficiency	left-hand side banner.  List of completed issues were displayed in the burndown chart report, while it is not needed.	HE6	3	1	Reports → Sprint burndown chart — below the chart, sections like Completed issues and Issues completed outside of sprint list items, adding noise to a report that should focus on remaining work/burn rate. Avatar menu → JIRA section — shows Profile and Personal settings as two adjacent, similarly worded options with overlapping expectations, causing hesitation about where to change user info/preferences.
Usability	Efficiency	There are other similar options that may distract the user (Profile , Personal Settings) .	HE7	2	1	Avatar menu → JIRA section — shows Profile and Personal settings as two adjacent, similarly worded options with overlapping expectations, causing hesitation about where to change user info/preferences.
Usability	Efficiency	Providing unneeded information: No need to add the creation information since they are available in the story "history" button).  The sprint was created directly after pressing on the "Create Sprint" button with no option to go back or cancel.	HE8	2	1	Issue details → Activity panel shows "Created ... ago" and "Updated ... ago" inline, while the same timestamps are already available under History; duplicative metadata clutters the edit view without aiding the task.
Usability	Errors	The form provides autocomplete for email addresses using the same domain of the administrative.	HE9	2	1	Backlog → Create sprint — clicking Create sprint instantly adds a new sprint in the backlog without a confirmation dialog or cancel/undo path (no chance to review name/dates).
Usability	Errors	No confirmation message before adding the member.	HE10	3	1	People → Add people dialog — typing a character autocompletes with a same-domain email suggestion, encouraging accidental invites to incorrect addresses and leaking domain context.
Usability	Errors	Issue type is chosen by default, which the user may not notice.	HE11	3	1	People → Add people — after entering an email and clicking Add, the invite is sent immediately with no confirmation/review step Backlog → "Create issue" inline field — a default issue type (e.g., Task) is preselected and the type switcher is tucked behind a small icon; users can add items without realizing the wrong type is being used.
Usability	Errors	The tool allows to add an issue to a released version.	HE12	3	1	Project → Releases — after marking a version as Released, users can still open an issue and set Fix versions to that released version from the issue details, allowing post-release assignments.
Usability	Errors	The tool allows to release a version with no any issues.	HE13	4	1	Project → Releases — user can click Release on a version even when it contains zero issues; no guard/confirmation about empty release, which can create meaningless versions.

Usability	Errors	The "done" work percentage is duplicated.	HE15	2	1	Board → Insights → Sprint progress — completion is shown twice ("33% done" at the right of the bar and "Done 33%" beneath), creating redundant, noisy metrics.	Pic12.4and8
Usability	Errors	Uninformative error message was displayed when entering an invalid email address, while preventing from moving to the next step.	HE16	4	1	People → Add people — entering an invalid email (e.g., missing TLD) highlights the field in red with the vague hint "Enter an email address"; no specific guidance (e.g., required format) while blocking the Add action.	Pic2.9
Usability	Errors	When starting a sprint without adding a task should not be allowed	HE17	2	1	Backlog → Start sprint (Task 6) — the Start sprint action is permitted even when the sprint contains zero issues; there's no guardrail or confirmation warning to prevent empty sprints.	-
Usability	Learnability	The option "Issue Type" is not expressive.	HE18	3	1	Backlog / Create issue composer — the small type switcher labeled Issue type uses terse names and icons (Story/Task/Bug) with no inline explanation; users can't tell differences at the point of entry, hurting first-time understanding.	-
Usability	Learnability	Edit story form shows the priority as uneditable while it can be edited.	HE19	3	1	Issue details → Priority — displayed as plain text ("Lowest") with subtle iconography and no field affordance; users may not realize it's clickable to change the value.	Pic5.4.1
Usability	Learnability	The "Create Sprint" button is in grey and placed at the bottom of the page, while active buttons are usually in bright colors and button for creating new items are expected to be found at the top of the page.	HE20	3	1	Backlog → Create sprint — control appears in a low-contrast grey and is positioned at the bottom of the backlog panel, away from other primary actions (e.g., Start/Complete sprint) at the top, reducing discoverability.	Pic6.4.1
Usability	Learnability	All fields in the "Edit Sprint" form are in grey which look like they are uneditable. Calender metaphor was not found while it used in other interfaces.	HE21	2	2	Backlog → "..." → Edit sprint — inputs (Start date, End date, Duration) appear greyed and lack the usual calendar/date picker affordance seen elsewhere, so users assume they can't edit or don't know how to set dates.	Pic6.4.2
Usability	Learnability	Remaining work was displayed in blue color while it was displayed in red in the Burndown chart	HE22	2	1	Board → Insights → Sprint burndown uses blue for "Remaining work", while Reports → Sprint burndown chart uses red for the same metric; inconsistent color	Pic12.4and8 - Pic10.8

Usability	Learnability	The label "Names and emails" is misleading as only emails are allowed.	HE23	3	1	mapping hurts quick interpretation. People → Add people dialog — field label says "Names or emails" and the placeholder suggests names (e.g., "Alex"), but submission requires a valid email address only, causing confusion.
Usability	Learnability	To add a story the user must select "Story" to specify the issue type by clicking on the small arrow in the "create issue field", which is not to be expected by the user.	HE24	3	1	Backlog → "Create issue" inline field — the issue type is hidden behind a small dropdown next to the icon; users must expand it and switch to Story before typing, which isn't discoverable.
Usability	Learnability	The displayed text "What to be done?" in the "create issue field" does not reflect the needed action.	HE25	2	1	Backlog → "Create issue" inline field — placeholder copy is misleading/ungrounded (e.g., "What to be done?") instead of a clear action like "Summary" or "Describe the work," which confuses first-time users creating a story.
Usability	Learnability	Initially, the sprint was added with a default name by Jira, and to change the sprint name or details the user must click on the "..." button, which may not be expected by the user.	HE26	3	1	Backlog → Sprint panel — new sprint appears with a generic name (e.g., "Sprint 2"); to rename or set dates the user must open the hidden ... menu → Edit sprint, which isn't obvious from the panel itself.
Usability	Memorability	The order or position of the buttons is not consistent with the rest of the interfaces and other systems.	HE27	2	6	Inconsistent primary/secondary action placement across screens: Add project details (Next/Cancel at bottom-right), Add people (Add/Cancel reversed vs other forms), Issue details → Comment (Save/Cancel order), Issue details → Edit (Save/Cancel order), Profile → Link preferences (Submit/Cancel order) — users must relearn button placement on each screen. Backlog → Open issue → Edit — secondary action is labeled Discard on the issue editor, while other Jira dialogs use Cancel (e.g., Add people, Edit sprint, Create project), breaking consistency.
Usability	Memorability	Discard button is not consistent with the rest of cancel buttons in the tool.	HE28	2	1	Backlog → Open issue → Edit — secondary action is labeled Discard on the issue editor, while other Jira dialogs use Cancel (e.g., Add people, Edit sprint, Create project), breaking consistency.
Usability	Satisfaction	The priority options list forces the user to choose a new priority while	HE29	2	1	Backlog/Board → Issue row → Priority picker — clicking the priority pill opens a menu that excludes the current value and

		removing the current option from the list and not offering any cancelation option.			offers no Cancel/Keep current choice; any click commits a change, nudging accidental edits.
Usability	Satisfaction	Manage account page has no back button because it was opened in a new webpage, which can be confusing and cause the user to close the browser.	HE30	2	1

## REFERENCES

- [69] A. Alshabib, N. Alakkas, and J. Hassine, “A Comparative Study of Heuristic Evaluation and Cognitive Walkthrough: An E-Government Usability Assessment Case Study,” SpringerA Alshabib, N Alakkas, J HassineArabian Journal for Science and Engineering, 2025•Springer, vol. 50, no. 10, pp. 7801–7830, May 2025, doi: 10.1007/S13369-025-09980-4.
- [70] E. Alshabeeb, H. Alshammare, N. Alakkas, and M. Alshayeb, “Evaluating Usability as a Key Human Factor in Agile SPM Tools Through Expert-Based Techniques,” in 39th IEEE/ACM International Conference on Automated Software Engineering Workshops (ASEW), Institute of Electrical and Electronics Engineers Inc., 2024, pp. 136–145. doi: 10.1145/3691621.3694963.