System Screens and How They Connect

Malcom Daggett | Mercer University
Network Outage Coordination and Automated Notification System

The public portfolio landing page holds the PDFs. The outage application has its own registration, login, and protected role screens.

Screen structure

Area	Contents and purpose
Public entry	Login; Create Account; requested role; requested site access. A pending account sees its pending status.
Network admin home	My requests, status, Create Outage, and links to request details.
Create Outage	Scope explanation; node map; product or complete-node choice; affected-node/service review; details/UTC/urgent; recipients; preview; submit.
Approver home	Waiting requests, full saved impact, decision comment, approve/reject, and decision history.
Site-contact home	Only approved, released notices for approved site assignments. Each notice body contains that site's relevant impact.
Request details	Immutable submitted scope, affected-node list, service list, recipients, approval decision, and history; restricted to authorized internal roles.
Controlled setup	Account activation and site access; nodes, dependencies, services, and recipient rules. Requires a trusted setup permission.
Help	Account access, map labels, scope choices, UTC, urgent rule, approval and site-notice instructions.

Main paths

New user: Create Account > request role/site access > manager verifies > Login > assigned home screen.

Engineer: Home > Create Outage > select node/scope > review predicted impact > details > recipients > preview > submit > request history.

Approver: Home > waiting request > impact and details > approve/reject > decision record.

Site contact: Home > released notice for an assigned site > read impact and UTC schedule.

Why I chose this structure

- Start with login so the server knows who can create, approve, or read a notice. Do not let a role-switch button replace authentication.

- Put the map early because the selected branch determines the services, sites, and recipients shown later.

- Use both map labels and a text list. Color alone should not communicate direct and downstream impact.

- Keep Product separate from Complete node outage. This first version models product scope locally and complete-node impact down configured required dependencies.

- Put UTC and the urgent rule next to the schedule fields.

- Show recipients and notice text after calculating impact, but before submission.

- Keep approval actions separate from outage creation. The approver sees the same submitted scope that will be used for notices.

- Keep site notices separate from internal request details. Pending/rejected requests and other sites' information are not available to a site contact.

Login and permission rules

Registration requests one of three roles: Network admin, Approver, or Site contact. A designated account manager verifies the role and site access before activation. A shared login page opens the home screen for the approved role. Users cannot grant themselves permissions.

The server checks permissions for each protected read and change, including direct requests. Separate accounts are used for engineer, approver, and site-contact testing. Passwords are stored as salted password hashes, not readable passwords. Logout ends the session. A trusted setup permission is not selectable at registration.

Impact and notice rules

Changing the selected node or scope in a draft recalculates impact and recipients. Submission saves the selected node, affected branch and services, and audience. Later topology edits do not alter a submitted request. The system simulates internal updates first and releases a separate site-specific customer notice only after approval.

The map predicts impact from fictional, configured dependencies. It is not live monitoring. The first prototype models required single-parent branches; alternate routes and redundant-path calculations are outside this version.