

MOM (MINUTES OF MEETING)

Date: 26TH February 2026 – 11:30 AM to 12:00 PM

Attendees

Haripriya Varanasi - Scrum Master
Siva Mani Subrahmanyam Hari Vamsi Pullipudi - Product Owner
Rishika Baddam - Development
Vaibhav Hasu - Development
Aryan Patel Kolagani - Development
Sujith Sriram Nangunoori - Development

William Martinez - Client
Gilberto Guevara Velázquez - Client
Lin Wells - Client

Notes:

1) Meeting objective

- Review the **Index Spec v1** and align the team on what to build next: **index generation → validation/backtesting → refinements**.
- Confirm team readiness to run and improve the **foundational notebooks**, and agree on collaboration expectations (GitHub + peer review).

2) Key discussion summary

A) *What the client shared (Index Spec v1 + expectations)*

- The project goal is **operational decision support** for life safety, infrastructure continuity, utility resilience, emergency response, and recovery.
- Design principles to follow:
 - **Defensible** and explainable scoring
 - **Operational** across pre/during/post event
 - **Transparent MVP** using weighted-sum baseline
 - **Confidence-aware** indices tied to data quality
 - **Scale-aware** (station → municipio aggregation).
- Four indices to implement:
 - **Risk Index (R)**: $R = H \times E \times V$ (hazard × exposure × vulnerability)
 - **Resilience Index (Res)**: ability to absorb disruption and keep functioning

- **Response Readiness (RR):** ability to respond fast/effectively if something happens tonight
 - **Recovery Capacity (RC):** how quickly essential services/livelihoods can be restored
- Scoring approach for MVP:
 - Normalize indicators to a **0–100** scale and combine via **weighted sum**.
 - Use **confidence scoring** based on data quality/provenance, and adjust the index accordingly.
- Operational framing:
 - Use **leading / coincident / lagging indicators** for pre-event readiness, during-event response, and post-event recovery.
- Thresholding and escalation:
 - Use quantile bands (Green/Yellow/Orange/Red) and **hard overrides**, e.g., **Flash Flood Warning → Red** regardless of score.

B) Where the team is now

- Client stated that the team has enough material for **data acquisition + index generation**, and asked students to **enrich notebook documentation** if any steps/cells are unclear.
- The team confirmed:
 - Repo access is working.
 - Jupyter notebooks are running fine for the team.
- Client guidance on next work:
 - Start moving from index review into **validation milestones** and begin **backtesting**.
 - Earthquake module is **not a priority right now**; focus first on flood hazard + index validation.
 - Students should collaborate and contribute via GitHub; “my repo is your repo.”

C) Implementation roadmap referenced

- MVP (Weeks 1–6): data source register + schemas + refresh runbook; flood hazard; Risk Index v1 + SVI overlay + confidence scoring.
- Validation (Weeks 7–10): backtest on 1–2 historical PR events; tune bands + phase switching; add response overlays (route reliability + facility proximity).

- Advanced (Weeks 11–14): earthquake module, dynamic weighting, equity checks, explainability pack.

3) Decisions / agreements

- Team will proceed using the **Index Spec v1** as the shared blueprint for indices and scoring approach (0–100 normalization, weighted sums, confidence-aware indices).
- Immediate focus is **flood hazard + index review → validation/backtesting**; earthquake work is later/optional.
- Collaboration model: team will **improve documentation, validate assumptions, and contribute through the shared repo** with peer collaboration.

4) Action items

Student team

- Review the Index Spec v1 and map each required indicator/dataframe to notebook outputs (NOAA/USGS/NWS/Census/SVI/infrastructure layers).
- Begin **backtesting/validation** planning and select 1–2 historical PR events for initial evaluation (per roadmap).
- Improve notebook readability where needed (add explanations/notes so future reviewers can reproduce runs).
- Start focusing at least one student (or subgroup) on one of the four indices (Risk/Resilience/RR/RC) for iterative improvement.

Client (William)

- Run a demonstration next week showing how the indices begin to work end-to-end and respond to parameter changes.
- Continue being responsive to repo upload/support issues (as stated in closing).

5) Next meeting focus

- Confirm index components and scoring pipeline are implemented consistently with the spec (including confidence scoring and threshold bands).

- Agree on the **historical events** to backtest and the success checks to use (rank correlation, stability under missing data, etc.).
- Assign ownership for one index per subgroup and log improvement items for peer review.