AIORI 2.0
Hackathon Guidebook

For more info, visit: https://portal.aiori.in/aiori-2/remote-hackathon/

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Hackathon To Dos and Guidelines

Here are some key criteria to consider:

1. Collaboration Criteria Throughout the Hackathon

- All teams are required to select a unique name for their group, which will serve as their identity throughout the hackathon.
- Create your team's private repository and add our GitHub account (https://github.com/aiori-hackathon/) as collaborators, allowing mentors for real-time oversight and integration of their work.
- Teams are required to upload a PDF to their GitHub repository, following a specific structure to ensure clarity and consistency. The presentation should include the following sections:

Section	Description
Problem Description	Clearly outline the problem the team is addressing, including context and significance.
Solution Proposed	Detail the solution the team has developed to tackle the identified problem.
Optimization Proposed by the Team	Describe any optimizations or enhancements the team has implemented to improve the solution.
Solution Architecture and Design	Provide an overview of the architecture and design of the solution, including flow chart diagrams.
Timeline of Delivery	Present a timeline that outlines key milestones and deadlines for project delivery.
References	List any references, resources, or tools used in the development of the project.

2. Weekly Call Attendance

- Teams are expected to participate in weekly calls, where they will engage in discussions about progress, challenges, and the next steps forward with the mentors.
- At designated intervals, each team will showcase their work through a demo presentation, highlighting their progress and the functionality of their projects.
- Teams are expected to adhere to the timeline, ensuring that milestones and deadlines they set for the project are met throughout the hackathon.

3. Project Innovation

Creativity & Originality: The uniqueness of the idea and its potential to solve a problem.

4. Technical Feasibility

Implementation: The practicality of the project within the hackathon's time frame.
Technical Skills: The level of expertise demonstrated in the chosen technologies.

5. Team Collaboration

Team Dynamics: The ability of team members to work together effectively.

6. Presentation Quality

Clarity: How well the team communicates their idea and project during the presentation.

7. User Experience

Design: The quality of the user interface and overall user experience.

8. Adherence to Guidelines

Documentation: Providing necessary documentation and code repositories as required. Teams must maintain clear and comprehensive documentation within the repository, making it easy for others to understand their work.

Hackathon Selection Criteria (Remote)

1. Problem Statement Relevance & Motivation (30 Points)

- Clear justification for choosing the specific problem (personal interest, academic relevance, professional curiosity).
- Demonstrates awareness of its importance in today's Internet ecosystem (e.g., DNSSEC, RPKI, LEO, Anycast, Measurement).
- Connection to broader outcomes (e.g., Internet resilience, scalability, security, efficiency, or user experience).

Example: Choosing *Problem Statement 03 (Post-Quantum DNSSEC)* and highlighting the urgency of PQC adoption under.IN domains.

2. Understanding of Key Issues & Challenges (40 Points)

- Identification of **technical challenges** (e.g., cryptographic overhead in PQC, latency in LEO networks, accuracy in IP geolocation).
- Awareness of **operational or measurement issues** (e.g., collateral damage in RPKI, query reliability in resolver benchmarking).
- Clear articulation of **research/engineering trade-offs** (performance vs. security, accuracy vs. cost, scalability vs. complexity).
- Creativity in defining *what success looks like* for their solution.

Example: For *Problem Statement 06 (Anycast Flipping & CDN UX)* → recognizing the difficulty of tracing user experience shifts due to routing changes.

3. Collaboration & Team Dynamics (30 Points)

- Evidence of teamwork methodology (Agile sprints, GitHub repos, shared measurement datasets, Slack/Discord coordination).
- Plan for *integrating diverse skills* — technical coding, measurement, analysis, presentation.
- Emphasis on **knowledge sharing** among teammates and with the wider hackathon community.

Example: For *Problem Statement BMN-08 (DNS Resolver Benchmarking)* → one teammate handles YANG models, another builds benchmarking automation, a third validates performance across resolvers.

Hackathon Selection Criteria (Remote Phase → Physical Hackathon)

Each team: **1 Faculty + 2 Students** | Duration: **1 Month Remote + 2 Day Physical Hackathon**

1. Problem Understanding & Justification – 15 points

- Clear reasoning for choosing the problem statement.
- Awareness of its significance in Internet measurement, security, or resilience.
- Alignment with hackathon objectives (secure, resilient, scalable Internet).

2. Technical Approach & Key Issues – 25 points

- Identification of major challenges/issues in solving the problem.
- Clarity of proposed approach to handle them.
- Use of appropriate tools, frameworks, or protocols (e.g., Git, YANG, DNSSEC, RPKI).
- Innovativeness of the solution.

3. Collaboration & Workflow – 20 points

- Effective use of Git and collaborative tools (commits, branching, PRs, issue tracking).
- Division of roles across faculty and students (mentorship + execution).
- Evidence of teamwork, regular updates, and problem-solving.
- Documentation of process (README, design notes, test cases).

4. Code Quality & Testing – 20 points

- Functionality and correctness of code.
- Unit tests, troubleshooting logs, and bug fixes attempted.
- Repository structure, clarity, and maintainability.
- Reproducibility of results (can another team/member run it?).

5. Progress & Deliverables – 10 points

- Completion of milestones within the 1-month period.
- Regular commits showing incremental progress (not one-shot uploads)
- Submission of interim results for mentor feedback.

6. Readiness for Integration – 10 points

- Code readiness for deployment in **AIORI Internet Measurement Platform**.
- Clear plan for integration, optimization, or scalability.
- Ability to interoperate with other teams' modules/tools.

Thresholds

- **70+ points** → Qualified for Physical Hackathon.
- **50–69 points** → Conditional, subject to mentor review.
- **Below 50 points** → Not eligible for physical round.

Judge’s Evaluation Sheet

Team Name	**Problem Statement**	**Understanding (15)**	**Technical (25)**	**Collaboration (20)**	**Code Quality (20)**	**Progress (10)**	**Integration (10)**	**Total (100)**	**Remarks**

Physical Hackathon Winner Selection Criteria

1. Functionality & Implementation – 20 Points

- Working prototype/demo runs as expected.
- Features match the problem statement requirements.
- Code handles real-world inputs and edge cases.
- Stability and reliability under test conditions.

2. Optimization & Performance – 20 Points

- Efficient use of resources (CPU, memory, bandwidth, energy).
- Latency, throughput, or error-handling improvements demonstrated.
- Evidence of profiling, tuning, or benchmarking results.
- For benchmarking tracks (BMN-07, BMN-08, BMN-09), clear metrics presented.

3. Integration with AIORI Internet Measurement Platform – 15 Points

- Solution is modular and integrates with AIORI APIs/measurement pipeline.
- Code interoperates with other teams' modules where applicable.
- Deployment readiness (scripts, configs, documentation).
- Minimal manual intervention required.

4. Teamwork & Collaboration in Real Time – 15 Points

- Effective coordination during the 2-day onsite sprint.
- Clear role distribution between faculty & students.
- Use of Git and collaborative workflows for last-mile fixes.
- Problem-solving under pressure.

5. Innovation & Impact – 10 Points

- Creative or unique approach to the problem.
- Potential broader applications beyond the hackathon.
- Contribution to Internet **security, resiliency, scalability, or efficiency**.

6. Presentation & Documentation – 20 Points

- Clear, concise final presentation/demo.
- Documentation that explains setup, usage, and integration steps.
- Ability to communicate solution to judges & peers.

Total: 100 Points

Thresholds:

- **80+ points** → Outstanding (eligible for IETF Hackathon Participation, possible adoption into AIORI testbed).
- **65–79 points** → Strong (qualified team, may need refinement).
- **<65 points** → Needs improvement (prototype incomplete or not integrable).

Judges Evaluation Sheet

Team Name	Problem Statement	Functionality (20)	Optimization (20)	Integration (15)	Teamwork (15)	Innovation (10)	Presentation (20)	Total (100)	Remarks