A. Proposal Setup

1. Proposal Title - **HydraAI Inspect – AI-Powered Vehicle Inspection & Fast Tokenization Layer**
2. Applicant
    a. Applicant name and surname: **Maulana Anjari Anggorokasih**
    b. Are you submitting this proposal as an individual or as an entity (whether formally incorporated or not)? **Sumbu Labs (PT. Sumbu Inovasi Digital)**

B. Proposal Summary

1. Budget Information - enter the amount of funding you are requesting in ADA **~~₳~~75,000**
2. Time - please specify how many months you expect your project to last **(6 months)**
3. Translation Information
    a. Please indicate if your proposal has been auto-translated **(No)**
    b. Original language **English**
    c. Original document link **(N/A)**
4. Problem Statement - what is the problem you want to solve
   The global pre-owned automotive market depends heavily on vehicle inspections, yet these inspection records are fragmented, unverifiable, and prone to manipulation. Buyers cannot easily trust inspection results, sellers cannot easily prove a car's true condition, and inspection data lacks any global, tamper-resistant standard.
   At the same time, inspection workflows involve high transaction volumes (updates, verifications, metadata changes), which makes storing everything directly on-chain impractical due to cost and latency.
5. Solution Overview - summarize your solution to the problem
   HydraAI Inspect is an AI-powered vehicle inspection platform that uses **Hydra** to process inspection events quickly and cost-efficiently.
   Users upload vehicle photos → AI detects damage → the system generates a **Vehicle Condition Token (CIP-68 NFT)** stored immutably on Cardano.
   Hydra is used as a fast settlement layer for batching: inspection sessions, metadata updates, verifier approvals, and token issuance. This makes the system scalable for industrial use.
6. Supporting Documentation - Links to any relevant documentation, code repositories, or marketing materials. All links must use HTTPS. Please make sure that submitters own or have rights to share any linked content.
    a. GitHub (architecture + Hydra scripts)
    b. AI model reference (YOLOv11n)
    c. System diagrams
    d. UX wireframes
7. Project Dependencies
    a. Does your project have any dependencies on other organizations, technical, or otherwise? **(No)**
    b. Describe any dependencies or write "No dependencies" **None**

8. Project Open Source
    a. Will your project's outputs be fully open source (yes/no)? **Yes**
    b. Please provide details on the intellectual property (IP) status of your project's outputs, including whether they will be released as open source or retained under another license. If applicable, describe the IP status of your project and the license type. **MIT (All code will be publicly available for other builders to learn from and extend.)**

C. Theme Selection

1. Theme **(real-world utility)**

D. Campaign Category

1. Selected Category **(Cardano Use Cases — Prototype & Launch)**
2. Category Questions
    a. Describe what makes your idea innovative compared to what has been previously launched in the market (whether by you or others) (answer in 10240 characters or less)
    HydraAI Inspect introduces a novel combination of **AI computer vision**, **Hydra L2 batching**, and **CIP-68 tokenization** to create verifiable, tamper-proof vehicle inspection records.

    Innovation highlights:

    - First Hydra-powered industrial inspection workflow
      While past Catalyst projects have explored NFTs and data storage, none have combined AI inspection data with Hydra-based fast settlement to create a scalable inspection framework.
    - AI-assisted condition verification
      Damage detection and scoring via AI reduces subjective variance and inspection fraud.

    - CIP-68 Vehicle Condition Token (VCT)
      Each inspection mints an updatable NFT representing the vehicle's condition—creating a global, verifiable inspection format.

    - Hydra as the operational engine
      Inspection workflows involve many intermediate steps. Hydra enables:
        - batching of high-volume updates
        - near-instant confirmations
        - reduced cost
        - selective settlement to L1
    - Developer-friendly open-source reference
      The project delivers both a working prototype and a reusable blueprint for AI+Hydra+tokenization applications. This blueprint is highly modular and easily adaptable for various other use cases.

b. Describe what yout prototype or MVP will demonstrate and where it can be accessed (answer in 10240 characters or less)
The MVP will include:

- AI Damage Detection Service
  - User uploads car images
  - AI model outputs damage classification and severity
- Hydra-based Inspection Workflow
  - Initiate inspection session in a Hydra Head
  - Store intermediate AI results
  - Update inspection metadata
  - Approve inspection by multiple parties (inspector, dealership)
- CIP-68 Vehicle Condition Token
  - Minting of a VCT
  - Metadata includes condition score, detected issues, timestamps
  - Token stored on Cardano testnet
- Prototype UI
  - Upload photos
  - View AI results
  - View minted token link
  - QR code viewer for VCT
- Testnet deployment
  - Hydra head instance accessible through public endpoint
  - Public demo instructions via GitHub

Users and reviewers can interact with the MVP through a web demo and inspect the workflow via testnet explorer.

c. Describe realistic measures of success, ideally with on-chain metrics (answer in 10240 characters or less)
   - On-chain Metrics
     - 500+ inspection events executed
     - 300+ CIP-68 VCT tokens minted
     - 1,000+ Hydra transactions processed
     - ≥50 settlement operations committed to Cardano L1
   - Public testnet deployment fully functional
     - Qualitative Metrics
     - Community developer feedback
     - Number of forks/stars on GitHub
     - Number of Hydra builders referencing the open-source code
   - Adoption Metrics
     - At least 3 workshops or demos with the Cardano community
     - 50+ users testing the platform during open beta

E. Your Project & Solution

1. Solution - please describe your proposed solution and how it addresses the problem (answer in 10240 characters or less)
   HydraAI Inspect is a decentralized vehicle inspection pipeline powered by Hydra. The system combines AI-generated damage analysis with secure tokenization, enabling trusted vehicle condition records that can be independently verified anywhere in the world.
   Workflow:
   1. User or inspector uploads vehicle photos
   2. AI model detects damage (scratches, dents, bumper issues, paint defects, etc.)
   3. Hydra processes inspection session updates (fast, off-chain)
   4. Once confirmed, inspection metadata is finalized
   5. A Vehicle Condition Token (VCT) is minted on Cardano using CIP-68
   6. Users receive a QR code linking to the token metadata
   7. Settlement to Cardano L1 ensures long-term immutability

   Hydra makes this workflow scalable, low-cost, and instant, allowing industrial-grade inspection operations.
2. Impact - Please define the positive impact your project will have on the wider Cardano community (answer in 10240 characters or less)
   HydraAI Inspect contributes significantly to Cardano by:
   A. Expanding Hydra adoption
   This serves as a high-value industrial reference showcasing how Hydra can power real-world high-throughput applications.

   B. Enabling new developers
   The open-source repo becomes a valuable learning tool for:
   Hydra beginners
   AI integration builders
   NFT metadata engineers
   Automotive/Web3 innovators

   C. Real on-chain activity
   The project will generate consistent, meaningful transaction volume through:
   VCT minting
   metadata updates
   settlement transactions
   multi-party approvals

   D. Bridging AI and Cardano
   This project demonstrates how Cardano can serve as a trusted ledger for AI-generated data, promoting future AI+blockchain solutions.
3. Capabilities & Feasibilities - What's your capability to deliver your project with high levels of trust and accountability? How do you intend to validate if your approach is feasible? (answer in 10240 characters or less)
   Team Capability (Sumbu Labs)

A 5-person engineering team with expertise in:

- Cardano development
- Hydra integration
- AI computer vision
- Backend systems (.NET, TypeScript, Go)
- Blockchain architecture
- Kubernetes, Docker, devops
- Production-grade system design
- UI/UX, frontend, and mobile development

Feasibility:

- AI models (YOLOv11n) are readily available
- Hydra scripts and devnet resources already exist
- CIP-68 minting is well documented
- Tokenization pipeline is straightforward
- 6-month roadmap is realistic

F. Milestones

1. How many milestones do you need to achieve in order to complete your project successfully? The number of milestones required depends on the amount of funding requested. Please refer to the Guidance card on the right for details (choose from 3-6 milestones)
   Total Milestones: 6
2. For each milestone, write:
   a. Milestone title (100 characters or less)
   b. Milestone Outputs (describe the deliverables or outcomes for this milestone in 2000 characters or less)
   c. Acceptance criteria (define the criteria for success in this milestone in 2000 characters or less)
   d. Evidence of completion (Specify the evidence that will demonstrate this milestone is complete - in 2000 characters or less)
   e. Delivery month - enter the month when the milestone is expected to be delivered
   f. Cost (in ADA)
   g. Progress - enter the percentage of overall project completion progress for this milestone (10-100%, multiple of 10)

Milestone 1 — Architecture & AI Integration

Outputs:

- System architecture
- Initial AI damage detection model integrated
- Backend skeleton repos

Acceptance Criteria:

- AI recognizes at least 5 common types of vehicle damage

- Architecture covers Hydra, backend, AI, CIP-68

Evidence:

- GitHub repo with code + documentation

Delivery: Month 1
Cost: ₳10,000
Progress Contribution: 10%

Milestone 2 — Hydra Head Setup

Outputs:

- Hydra devnet running
- Hydra workflow for session creation

Acceptance Criteria:

- Hydra process can create, update, and close inspection sessions
- Unit tests included

Evidence:

- Hydra logs, scripts, public instructions

Delivery: Month 2
Cost: ₳12,000
Progress Contribution: 20%

Milestone 3 — CIP-68 Vehicle Condition Token (VCT)

Outputs:

- Smart metadata format
- Token minting pipeline
- Settlement pipeline to L1

Acceptance Criteria:

- VCT created on testnet
- Metadata contains AI results

Evidence:

- Testnet explorer links

- GitHub repo code

Delivery: Month 3
Cost: ₳13,000
Progress Contribution: 40%

Milestone 4 — Full Inspection Workflow MVP

Outputs:

- End-to-end inspection using Hydra
- AI → Hydra → CIP-68 flow
- QR code viewer

Acceptance Criteria:

- Users can do entire workflow via UI
- Hydra updates appear instantly

Evidence:

- Public video demo
- GitHub with frontend

Delivery: Month 4
Cost: ₳15,000
Progress Contribution: 60%

Milestone 5 — Public Testnet Deployment

Outputs:

- Public Hydra endpoint
- Public frontend and backend
- Test instructions

Acceptance Criteria:

- Community can run at least 100 inspection tests
- Testnet VCTs mint successfully

Evidence:

- Testnet links
- GitHub documentation

Delivery: Month 5
Cost: ₳12,000
Progress Contribution: 80%

Milestone 6 — Community Testing & Final Report

Outputs:

- Final report
- Community feedback summary
- Code freeze (open-source)

Acceptance Criteria:

- ≥300 inspection tests
- GitHub repository stabilized

Evidence:

- Public report
- Final code base

Delivery: Month 6
Cost: ₳13,000
Progress Contribution: 100%

G. Final Pitch

1. Project Team – Sumbu Labs
   A 5-person engineering team specializing in blockchain, AI, backend engineering, and devops.
   Each team member will provide LinkedIn and GitHub links for verification.
2. Budget & Costs
   Total Requested: ₳75,000
   Allocated across 6 milestones (details above).
3. Value for Money
   This project delivers:
   - Hydra reference implementation
   - AI+blockchain integration blueprint
   - Fully open-source code
   - Real testnet application
   - High on-chain activity

   The outcome will be reusable for other industries (insurance, logistics, inspection services).

H. Self-Assessment

1. Self-Assessment Checklist
   Sumbu Labs confirms:
   - No conflicting ongoing Catalyst projects
   - Commitment to open source
   - Team identity is verifiable
   - All milestones are achievable within 6 months

I. Required Acknowledgments

Team accepts all Fund15 rules regarding:

- transparency
- milestone-based payouts
- reporting obligations
- public visibility of deliverables