System Information Questionnaire (SIQ) – OEM Discussion

Project: QNX-Linux DataBridge

Client: OEM / Brightskies Embedded Linux Project

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1. General System Information

- • What is the main goal or use case of the data communication system?
- • What functional requirements must the system meet (e.g., data rate, file size, transfer frequency)?
- • Are there any regulatory or industry standards (like AUTOSAR, ISO 26262) to follow?
- • Do you have an existing architecture or system interface document?

2. Software & Versioning

- • What QNX OS version and build tools are currently used?
- • Which Yocto version or branch should we align with?
- • Do you have a preferred Linux kernel version for compatibility?
- • How do you manage software updates or OTA upgrades for the system?
- • Are there specific compiler versions or cross-compilation environments required?
- • What firmware or BSP version is used for the hardware?

3. Network & Communication

- • What communication medium will be used (Ethernet, Wi-Fi, CAN, etc.)?
- • Are there specific IP ranges or VLANs reserved for communication?
- • What latency or throughput requirements are expected?
- • Should the system support IPv6 or IPv4 only?
- • Are there firewall, NAT, or VPN configurations to consider?
- • Do you use SOME/IP-SD for service discovery or static configuration?
- • Should SOME/IP run over TCP or UDP?
- • Do you require QoS or message prioritization?

4. Data Integrity & Security

- • Which CRC algorithm should be used (CRC16, CRC32, polynomial type)?

- • Is data encryption (AES, TLS) needed during transmission?
- • Should authentication be added between QNX and Linux nodes?
- • How should the system handle data corruption or failed CRC validation?
- • Are security audits or penetration tests required?
- • Should logs be stored locally or sent to a remote server?

5. System Performance & Constraints

- • What is the maximum file size expected for transfer?
- • What response time or throughput is acceptable?
- • Do we have CPU/RAM usage limits for each node?
- • Should the system recover automatically from communication failures?
- • Are there real-time constraints for QNX?
- • Do you require performance metrics logging?

6. Integration & Testing

- • Will you provide a reference implementation or test harness?
- • What APIs or interfaces should we integrate with existing modules?
- • Do you have a preferred testing framework (Robot, pytest)?
- • What KPIs define successful integration?
- • Should testing include fault injection (corrupted packets)?
- • Do we need HIL or SIL testing?
- • Should test reports be generated and shared periodically?

7. Deployment & Maintenance

- • What is the target hardware platform for deployment?
- • How often should software be updated or maintained?
- • Should the update process be manual, scripted, or OTA?
- • Who is responsible for maintenance after delivery?
- • Should logs and metrics be uploaded to a central server?
- • Are there power constraints (e.g., resume automatically after reboot)?

8. Documentation & Deliverables

- • What documentation format do you prefer (PDF, DOCX, Confluence)?
- • Should we provide API documentation?
- • Do you require a User Manual, Developer Guide, or both?
- • Should diagrams follow a specific UML or AUTOSAR format?
- • Is there a review or sign-off process for deliverables?

9. Release & Change Management

- • How do you handle software version tracking?
- • Do you require release notes for each version update?
- • What is the approval workflow before release?
- • Should we follow branching policies (main/develop/release)?
- • How should bug reports and fixes be communicated (JIRA, internal tool)?

10. Future Expansion

- • Do you plan to scale the system (multiple clients, more ECUs)?
- • Should the architecture support cloud data transfer in the future?
- • Are there plans to move to AUTOSAR Adaptive Platform?
- • Should the protocol support redundancy or load balancing?