

This document includes two AI prompts that help you prepare a complete and structured request.

Prompt #1

I am preparing a request for Wireless Connectivity Development by the EnCata team and want to make sure my input contains enough information to define the right communication architecture without unnecessary iterations or assumptions.

Here is my current input:

"<<<INSERT YOUR INPUT HERE>>>"

At EnCata, a Wireless Connectivity Development request should clarify the following areas:

1. Product and connectivity goal

- What the product is and what it should communicate with
- Why wireless connectivity is needed
- What the wireless connection must enable for the user or system
- Whether connectivity is a new feature or part of an existing product

2. Communication scenario

- What devices or systems need to exchange data
- Whether communication is device-to-device, device-to-gateway, device-to-phone, device-to-cloud, or another architecture
- Whether communication is one-way or two-way
- How often communication should occur

3. Range, data, and response requirements

- Required communication range
- Type and approximate volume of data being transferred
- How frequently data must be sent or received
- Whether low latency or near-real-time response is important
- Whether occasional packet loss or delays are acceptable

4. Device count and network architecture

- How many connected devices are expected in one installation or network
- Whether devices are fixed or mobile
- Whether a gateway, router, smartphone, base station, or other infrastructure is available
- Whether devices need to communicate directly with each other
- Whether mesh, star, point-to-point, or another network topology is expected, if known

5. Power and battery requirements

- How the device is powered
- Expected battery life, if battery-powered
- How frequently the device can wake up or transmit
- Whether power consumption is a critical product constraint

6. Operating environment

- Where the product will operate: indoor, outdoor, industrial, residential, agricultural, mobile, etc.
- Expected distances, walls, machinery, metal structures, or other obstacles
- Known sources of interference
- Temperature, moisture, vibration, movement, or other relevant environmental conditions
- Whether reliable operation is required in areas with weak or unavailable internet or cellular coverage

7. Wireless technologies and existing decisions

- Whether any technology is already preferred or required, such as BLE, Wi-Fi, RFID/NFC, Sub-GHz, LoRaWAN, NB-IoT, LTE-M, cellular, Thread, Zigbee, UWB, or another option
- Why that technology is being considered
- Whether alternative technologies may be evaluated
- Whether any modules, RF chips, SoCs, or communication platforms have already been selected

8. Existing hardware and antenna constraints

- Whether custom electronics already exist
- PCB size and layout constraints, if known
- Existing antenna type or antenna placement
- Enclosure material and geometry
- Whether the enclosure contains metal or other materials that may affect RF performance
- Whether the wireless system must fit into an existing product without major mechanical changes

9. Connection behavior and firmware

- What should happen if the connection is interrupted
- Whether the product must reconnect automatically
- Whether local control or offline operation is required
- Whether a fallback communication channel is needed
- Whether communication firmware already exists
- Whether remote firmware updates are required

10. User setup and security

- How the user should connect or pair the device
- Whether the device must be provisioned during manufacturing or first setup
- Whether users need to enter network credentials or claim a device to an account
- How devices should be authenticated
- Whether factory reset, device replacement, or ownership transfer must be supported

11. Markets, lifecycle, and compliance

- Countries or regions where the product will be sold or deployed
- Expected product lifetime
- Whether long-term availability of modules and components is important
- Whether second-source components are required
- Known certification requirements, such as CE RED or FCC
- Whether the design is already approaching formal compliance testing

12. Validation expectations

- What would be considered successful wireless operation
- What range, stability, recovery, power, or data-transfer behavior should be tested
- Whether validation should be performed on a PoC, functional prototype, MVP, or near-final device
- Whether field testing in the real operating environment is required

13. Existing materials and project stage

- Existing schematics, PCB files, firmware, CAD, prototypes, antenna information, module datasheets, test results, or previous experiments
- Current product maturity: concept, PoC, functional prototype, validation prototype, or pilot-ready device
- What has already been tested and what problems have already been observed

14. Business and development context

- Why connectivity development is needed now
- Target production volume, if known
- Whether BOM cost is an important constraint
- Target timeline
- Expected next step after wireless development

Your task:

- Identify missing, unclear, or weakly defined areas in my input
- Structure your answer by the categories above
- For each gap, briefly explain why it matters for wireless connectivity development
- Do not select a wireless technology yet unless the available information clearly supports that decision
- Do not rewrite my request. Focus only on identifying gaps

Important instructions for your response:

- Use clear and practical language
- Avoid unexplained RF, networking, or embedded-system terminology
- Keep clarification requests short and easy to answer
- If technical wording is necessary, briefly explain it in simple terms
- Focus on helping a non-engineering person understand what information EnCata needs

Prompt #2

I am continuing preparation of my Wireless Connectivity Development request based on your previous analysis.

Here is my initial input:

"<<<INSERT INITIAL INPUT HERE>>>"

Here is the additional information I have provided to fill the gaps:

"<<<INSERT ADDITIONAL INFORMATION HERE>>>"

At EnCata, Wireless Connectivity Development requires clarity in the following areas:

1. Product and connectivity goal
2. Communication scenario
3. Range, data, and response requirements
4. Device count and network architecture
5. Power and battery requirements
6. Operating environment
7. Wireless technologies and existing decisions
8. Existing hardware and antenna constraints
9. Connection behavior and firmware
10. User setup and security
11. Markets, lifecycle, and compliance
12. Validation expectations
13. Existing materials and project stage
14. Business and development context

Your task:

1. Re-evaluate the combined input (initial + additional information)
2. Identify what is still missing, unclear, or weakly defined
3. Check whether the requirements are sufficient to define the wireless connectivity development scope
4. Based on the available information, compile a structured Wireless Connectivity Development request for EnCata

If some information is still unavailable:

- Clearly mark it as "Missing information"
- Where a low-risk assumption can reasonably be made, mark it as "Assumption"
- Do not invent exact ranges, protocols, battery-life targets, certification requirements, or technical specifications that the input does not support

If a specific wireless technology has not yet been selected:

- Describe the communication requirements instead of choosing one without sufficient evidence
- Clearly state that protocol selection should be part of the EnCata scope

Structure the final request as follows:

1. Project overview
2. Connectivity goal
3. Communication scenarios
4. Performance requirements
5. Operating environment
6. Power requirements
7. Wireless technology considerations
8. RF hardware and antenna integration
9. Network and firmware behavior
10. Provisioning, onboarding, and security
11. Markets, lifecycle, and compliance
12. Validation requirements
13. Existing materials
14. Risks and open questions
15. Expected development outcome

What EnCata is expected to deliver, such as:

- Connectivity requirements
- Protocol comparison and recommendation
- Wireless system architecture
- RF hardware design
- Antenna and PCB integration
- Communication firmware
- Functional wireless prototype
- Range and stability test results
- Design and firmware updates
- Production and compliance preparation inputs

Only include deliverables that are relevant to the provided project information.

Output requirements:

- A structured draft request ready to send to EnCata
- Clearly mark assumptions and missing information
- Keep the response clear and practical
- Do not include explanations outside of the request
- Do not over-specify the technical solution where the correct technology should be determined during engineering