

CASE STUDY



Testing a Smart Thermostat System

Ensuring smooth performance across networks, devices, and real-world conditions



PRODUCT OVERVIEW

Our client is a **software development company** in the smart home IoT market. They were preparing to launch a **smart thermostat system** with a mobile app, central hub, and wireless sensors, allowing users to control heating remotely at home or in small businesses.



CLIENT'S NEEDS



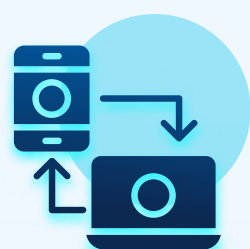
Reliable pairing and stable connectivity between the mobile app, hub, and wireless sensors.



Smooth operation of the app-device integration, including data exchange and synchronization.



Smooth performance in real-world conditions: weak Wi-Fi, power loss, offline/restore scenarios.



Cross-platform stability across different OS versions, devices, and networks.



User-friendly experience with clear instructions and error messages to guide customers during setup and troubleshooting.

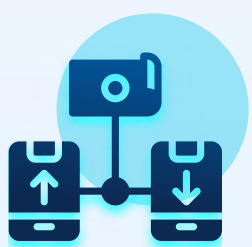
IMPLEMENTATION



Conducted **functional testing** to verify app-hub-1sensor interactions during onboarding, pairing, re-pairing, and everyday use.



Performed **compatibility testing** to ensure stable operation across different OS versions, mobile devices, and network types.



Ran **integration testing** to validate smooth communication and data flow between the app, hub, and sensors.

IMPLEMENTATION



Ran **performance testing** to measure pairing time, telemetry delays, and battery consumption of sensors.



Performed **usability testing** to check error messages, update prompts, and user flows, ensuring clear guidance and a smooth experience.



Delivered **detailed documentation and transparent reporting** to support scalability and maintain partner trust.

SOLUTIONS

Testing Types

- **Functional** Testing
- **Compatibility** Testing
- **Integration** Testing
- **Performance** Testing
- **Usability** Testing

Tools & Environments:

- **Testing Tools:** JMeter, SoapUI
- **Bug Tracking:** Jira
- **Test Management:** TestRail
- **Operating Systems:** iOS, Android

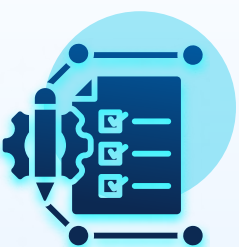
TANGIBLE RESULTS FOR THE CLIENT

- **Pairing success rate increased from 84% to 98.5%**, ensuring stable connectivity between app, hub, and sensors.
- **Telemetry delay reduced from 4.8s to 1.9s (p95)**, improving real-time responsiveness.
- **41 defects** identified before release, including **7 critical issues**.
- **Sensor battery life improved by ~15%** through performance optimization.
- Projected **38% fewer support tickets** after launch due to improved stability and usability.

DELIVERABLES



Detailed bug reports highlighting detected issues with clear screenshots and recordings.



A comprehensive test documentation, including a test plan, testing strategy, and test scenarios.



Recommendations for UI/UX improvements based on usability testing results.



Make your **IoT ecosystem** stable,
reliable, and ready for users!

START QA WITH US

