



Intellex Consulting services

Locations: UK, UAE and India

System Assurance of Power Distribution, Third rail, and SCADA Subsystems for Bhopal and Indore Metro rail Project

System Engineering, RAMS, System Assurance Consultancy & Training

Website: www.intellexuk.com



Project Overview

- Scope of Work

Ensuring System Assurance for the design stage and performing comprehensive RAM and Safety Analysis for the Power Distribution, Third Rail, and SCADA subsystems within the Bhopal and Indore Metro Projects.

- **Project Duration : Ongoing (Nov 2023 – Ongoing)**



Project Overview

Project Background & Context

- ❑ Designed to meet the rising demands of urban transportation, this Mass Rapid Transit System (MRTS) aims to alleviate traffic congestion, enhance air quality, and deliver a reliable, efficient transit solution for the city's growing population.
- ❑ Intellex RAMS Assurance Consulted Pvt. Ltd. has been awarded a contract to ensure the safety and reliability of Power Distribution Systems, Third Rail, and SCADA for the Bhopal and Indore Metro Project.
- ❑ Seamless Movement for the Elderly, Differently abled, Women and Children, this will also fulfill the cause of equal opportunity to all.
- ❑ Conserve the rich Heritage, Natural Beauty and Bio Diversity, by making the project amicable with the city surrounding.



Case Study Highlights

Case Study Outline

The RAMS techniques and assurance methods used in this project to identify and mitigate risks impacting the Safety, Reliability, and performance of the system are given below;

- ☐ RAM Plan, Safety Plan, EMC Plan
- ☐ Comprehensive Hazard Analysis –IHA, PHA, SSHA, O&SHA, and EMC Hazard Analysis
- ☐ Safety Studies Report (Including QFTA)
- ☐ RAM Analysis & Prediction Reports , Failure Mode Effect and Criticality Analysis (FMECA)
- ☐ Design Safety Case



Case Study Highlights

Challenges Encountered

- ☐ **Minimal Client Involvement** - Difficulty in securing regular feedback or decision-making from the client led to delays in project milestones.
- ☐ **Prolonged Approval Cycles** - Prolonged client approval cycles for documents, designs, or changes impacted project timelines and progress.
- ☐ **Insufficient Training and Knowledge Sharing** - Lack of sufficient training or knowledge-sharing sessions from the client side affected the team's understanding of complex requirements.
- ☐ **Coordination Challenges** - Difficulty aligning project timelines and managing client expectations effectively.
- ☐ **Changes in Priorities** - Different priorities between client departments created misalignment and delayed decision-making.



Case Study Highlights

Resolutions

- ☐ Conducted regular checkpoint meetings with the client to review key decisions and ensure their active involvement in the project progress.
- ☐ Set up clear timelines for approvals and scheduled meetings with the client to receive status updates on critical documents.
- ☐ Facilitated workshops to clarify the project scope and requirements.
- ☐ Held regular internal team meetings with senior engineers and conducted reviews of deliverables to gain a better understanding of project requirements and scope.
- ☐ Focused on prioritizing key deliverables to meet deadlines without compromising quality.



Conclusion

- ❑ Regular and effective communication with the client is crucial to expedite the delivery of deliverables and adhere to project timelines.
- ❑ Effective coordination, discussions, and knowledge sharing within the team are essential for enhancing the quality of deliverables and meeting project deadlines.
- ❑ Incorporating RAMS principles into the preliminary design stages crucial for identifying safety requirements, achieving safety targets, and proactively mitigating potential risks that may not be evident in early design stages.



Thank You

Contact us to discuss where we can assist.

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