Phase 1 – Conception Phase

Project Title – Predictive Train Delay and Disruption Analysis System (Deutsche Bahn)

Abstract:

Passengers on Deutsche Bahn often face irregular train delays and disruptions because of factors such as weather conditions, track maintenance, platform congestion, and peak hour traffic. Most of the information provided by the available systems is reactive and descriptive. It means, passengers are informed about the delays afterwards than before delays happen. This kind of reactive information or strategy effects planning of both passengers and train operators that results in irritation, missing connection and poor management. This project proposes the development of a data-driven AI system that can predict the expected train delays and delay duration within 15-120 minutes period for each train station. The system will use historical data, real time Deutsche Bahn updates, weather and traffic conditions to generate predictions by applying ML algorithms and AI techniques such as SHAP. After implementation, the project will deliver an AI-powered predictive analysis platform that will improve the reliability and efficiency of train operations. Passengers will benefit from early alerts and insights that will improve travel planning and satisfaction. Overall, this solution demonstrates how Data science, ML and AI can transform railway operations into an intelligent and predictive system.