# ACTUAL I.T.
Member of DBA Group Company

# AI-BASED PLANNING:
## OPTIMIZATION OF VESSEL BERTH PLANNING

**ACTUAL's AI-based planning solution enables real-time resource planning optimization, considering various rapidly changing factors that require corresponding adjustments in plans. An example of such planning is the optimization of vessel berthing processes in ports, which reduces waiting times and enhances berth assignment efficiency.**

The solution employs AI-driven algorithms to create optimal berth plans, considering dynamic factors such as vessel characteristics, cargo, weather, and operational priorities. This flexible planning solution can also be applied in other industries, including manufacturing and warehouse process planning. It provides interactive plan adjustments via a graphical user interface, allowing real-time tracking of business events (changes in production tasks, warehouse orders) and plan modifications.

# KEY FEATURES

## AI-DRIVEN PLANNING ALGORITHMS

Advanced AI algorithms optimize resource allocations (e.g., vessel berths) based on factors like vessel size, cargo type, weather conditions, and operational constraints. Machine learning leverages historical data to enhance planning accuracy.

## DYNAMIC AND FLEXIBLE TASK AND RESOURCE SCHEDULING

Real-time factor updates ensure plans adapt to changes such as delays, shifting priorities, and weather conditions, thus improving resource utilization (e.g., production machinery, storage space).

## MANUAL ADJUSTMENTS

Users can manually adjust or block specific tasks/resources, excluding individual tasks from automatic optimization. Planning algorithms consider these adjustments during optimization, properly reallocating the remaining tasks.

## MODULAR FRONT-END APPLICATION

Provides intuitive graphical representations of the operational environment (port maps, machine schematics, warehouse layouts), displaying current and planned task schedules, asset positions (vessels, equipment, storage spaces), and real-time updates.

## SCALABLE ARCHITECTURE

Designed for rapid adaptation with future improvements, incorporating real-time data and compliance with processes and regulations.

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# TECHNICAL COMPONENTS

## AI PROCESSING FRAMEWORK (BACK-END)

Employs machine learning to continuously improve task allocations (berths, machines, storage positions) and enhance plans based on new data and performance metrics.

## USER INTERFACE (FRONT-END)

Web interface for system interaction, task status overview, plan activation, and historical data comparisons.

## SCALABILITY WITH INTEGRATIONS

Future-proof architecture supporting integration with third-party systems via APIs, ensuring compatibility with existing task and resource management software.

## SUMMARY:

**The AI planning solution transforms task scheduling processes using cutting-edge algorithms and artificial intelligence to streamline operations, resource utilization, and efficiency.**

### Want to learn more?

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