

Crisis-Proof Data Center: Mastering Unplanned Component Replacements

How to take control of large-scale hardware swaps

Unplanned infrastructure replacements—driven by security flaws, regulatory mandates, or expiring support—are becoming the norm. This whitepaper shows how integrated platforms streamline such projects with minimal disruption.

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In this Whitepaper

Unforeseen infrastructure replacements are no longer rare exceptions – they have become a reality for modern IT departments. Security vulnerabilities, regulatory interventions, or the end of support for critical components can trigger large-scale projects within weeks. These unplanned replacements often go beyond the scope and budget of routine operations, leading to complex, multi-site projects with tight deadlines.

This whitepaper demonstrates how companies can respond swiftly, in a coordinated and compliant manner, by leveraging integrated platform solutions. It covers:

- Key triggers for unplanned infrastructure swaps.
- Challenges in executing large-scale hardware replacements.
- Solution frameworks for managing these projects with minimal business disruption.
- Benefits and outcomes gained by deploying a workflow-driven system with extensive reporting and analytics.

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Key Findings at a Glance



Reduced Operational Disruption: Automated workflows, role-based task assignments, and transparent progress tracking minimize downtime and ensure continuity.



Enhanced Accuracy and Accountability: A single repository for device details (locations, owners, vendors) reduces errors and simplifies compliance with regulatory or internal audit requirements.



Scalability and Efficiency: The same approach and tools can seamlessly be adapted, whether replacing a single device type or performing a multi-location overhaul.



Proactive Issue Management: Real-time dashboards alert teams to stalled milestones or unresolved tasks, allowing swift remediation before small delays compound into major setbacks.



Ongoing Optimization: Rich analytics (e.g., average vs. maximum task durations, pipeline progress) provide actionable insights, enabling continuous improvement in future replacement initiatives.



Improved Compliance Oversight: Integrated audit trails and centralized device data simplify adherence to regulatory mandates, enabling faster, more accurate reporting and easier validation during audits.

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Introduction: The Unplanned Replacement Dilemma

Organizations carefully plan their IT architectures and operations to support long-term growth. Nonetheless, unforeseen circumstances – including newly discovered security flaws, regulatory actions, or manufacturer end-of-life announcements – can abruptly render existing equipment obsolete or non-compliant. When these events unfold, companies face disruptive, large-scale change initiatives under strict time constraints and heightened risk.

*Despite careful planning,
unforeseen issues can force
sudden, large-scale IT overhauls.*

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Differentiating Emergency Replacements from Standard IMAC

Standard IMAC (Install, Move, Add, Change) processes typically cover routine infrastructure changes that are planned in advance, well-budgeted, and follow established procedures.

However, the types of projects addressed in this whitepaper differ significantly and are characterized by the following:

- **External Drivers:** These initiatives are triggered by factors beyond internal planning – such as vendor changes or external mandates—not by deliberate internal decisions.
- **Extensive Scope:** They go far beyond a handful of devices, involving large-scale replacements that exceed the normal scope of IMAC activities.
- **Unplanned Nature:** These efforts arise unexpectedly and cannot be easily absorbed into existing plans or resources. Budgets and staffing levels are typically insufficient to handle the scope of work.

In contrast to standard IMAC tasks, large-scale, unplanned replacements often involve:

- **Multiple sites**, possibly across different regions or countries
- **Inadequate budgets** and teams not equipped for major infrastructure overhauls
- **Compressed timelines** requiring intensive planning and coordination

To ensure success, such projects require:

- **Dedicated Project Structures:** Given their scale and complexity, these efforts must be managed as standalone initiatives with appropriate budgeting and oversight.
- **Tailored Processes:** Existing procedures are often inadequate. Customized workflows, additional planning staff, specialized subcontractors, and new documentation or approval structures are typically needed to meet project demands.

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Key Drivers for Mandatory Reactive Infrastructure Replacement

Several factors can force organizations to replace infrastructure outside the scope of planned IMAC processes. These are typically high-impact triggers that demand immediate action:

1. Regulatory Mandates

Governments and regulatory bodies can impose sudden restrictions that make certain vendors or devices unusable. A notable example is the **U.S. Federal Communications Commission (FCC)** banning the import and sale of equipment from Huawei and ZTE due to national security concerns (📰 Reuters, 2022).

Similarly, Germany’s **Federal Ministry of the Interior** has initiated steps to limit the use of critical components from untrusted suppliers in 5G networks, reinforcing the importance of secure and sovereign infrastructure (📰 BMI, 2024).



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2. Security Vulnerabilities

Newly discovered or unresolved vulnerabilities – especially zero-day exploits – can force operators to decommission and replace vulnerable systems to prevent breaches. For instance, legacy systems like Cisco’s PIX 515E firewall became obsolete due to limitations in patching and upgrade paths (🔗 [Cisco Community](#)).

Critical CVEs such as 🔗 [CVE-2021-29294](#) highlight how vulnerabilities can impact trusted infrastructure overnight, prompting urgent swap-outs.

3. End-of-Life Announcements

When vendors announce the end of support for hardware or software, organizations face a narrow window to act. Continuing to use unsupported technology risks operational failure and loss of compatibility. A typical case is Cisco’s discontinuation of its **Catalyst 3750G** series, pushing businesses toward newer models to maintain support and integration (🔗 [Cisco EOL Notice](#)).

4. Evolving Security Standards

The shift toward modern security architectures—such as zero trust, advanced threat detection, and secure remote access – can render older systems both vulnerable and cost-inefficient. For example, organizations are increasingly replacing legacy VPNs with cloud-delivered secure access solutions to align with best practices and reduce risk (🔗 [Menlo Security Blog](#)).



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FNT's Integrated Approach

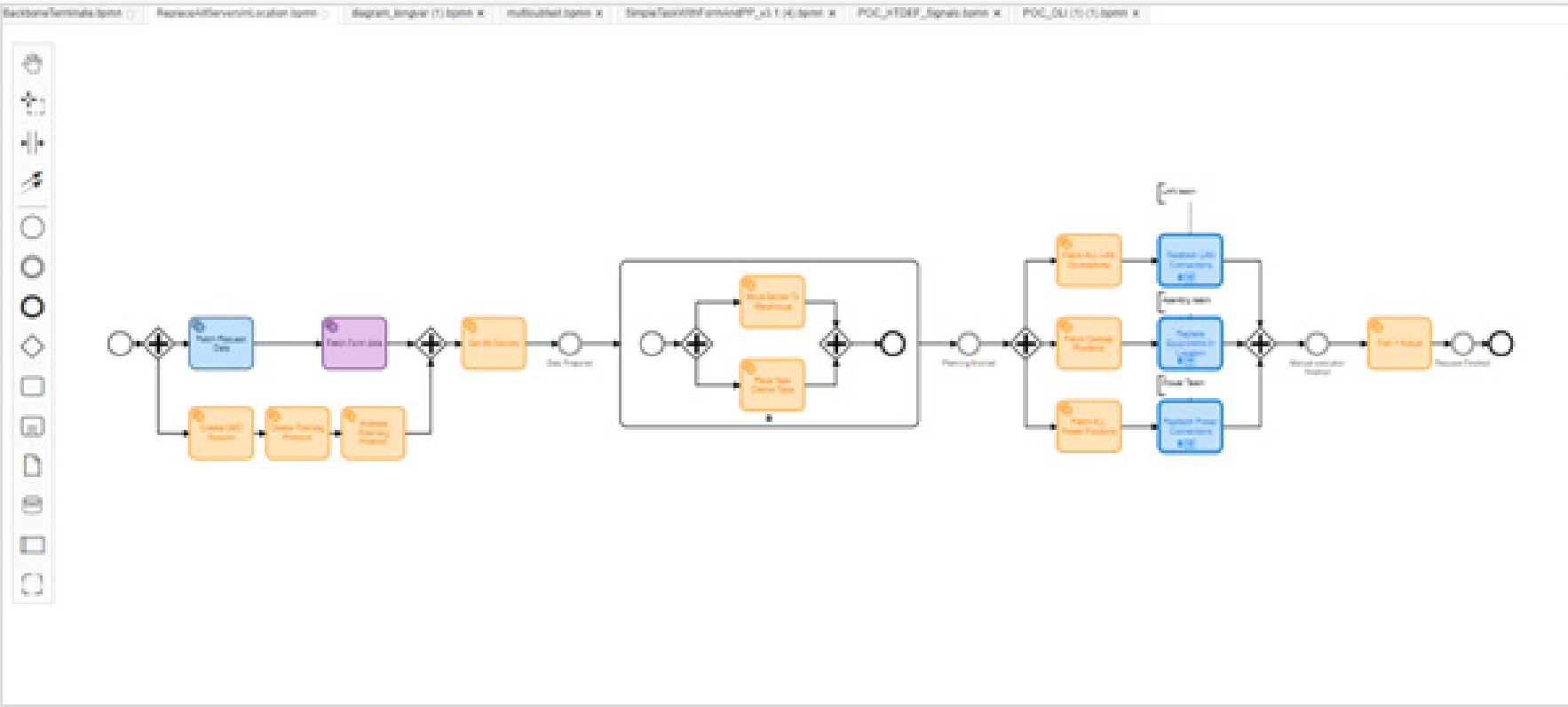
FNT's solution provides a robust framework for quickly identifying impacted devices, automating critical workflows, coordinating cross-functional teams, and delivering real-time status reporting. By employing a centralized management platform, organizations can streamline the entire replacement process – from planning and device swaps to final project close. The core capabilities include:

Comprehensive Device Overviews

FNT provides comprehensive visibility into infrastructure components through two key capabilities: Inventory Insights and Scope Assessment. With Inventory Insights, organizations can maintain a single source of truth that captures all relevant details—such as hardware models, physical locations, responsible teams, and associated supplier contracts. Scope Assessment builds on this foundation by enabling teams to quickly determine how many devices need to be replaced and where they are located, allowing for fast and accurate project scoping.

Workflow-Driven Replacement

A workflow-driven approach enables a streamlined and structured replacement process through an automated Switch Equipment Type workflow. This workflow not only automates the key steps involved in replacing components but also allows direct mappings between legacy and new device types to ensure consistency and speed in execution.



BPMN-Definition for a workflow automation based on site-by-site-processing iusing 3 teams

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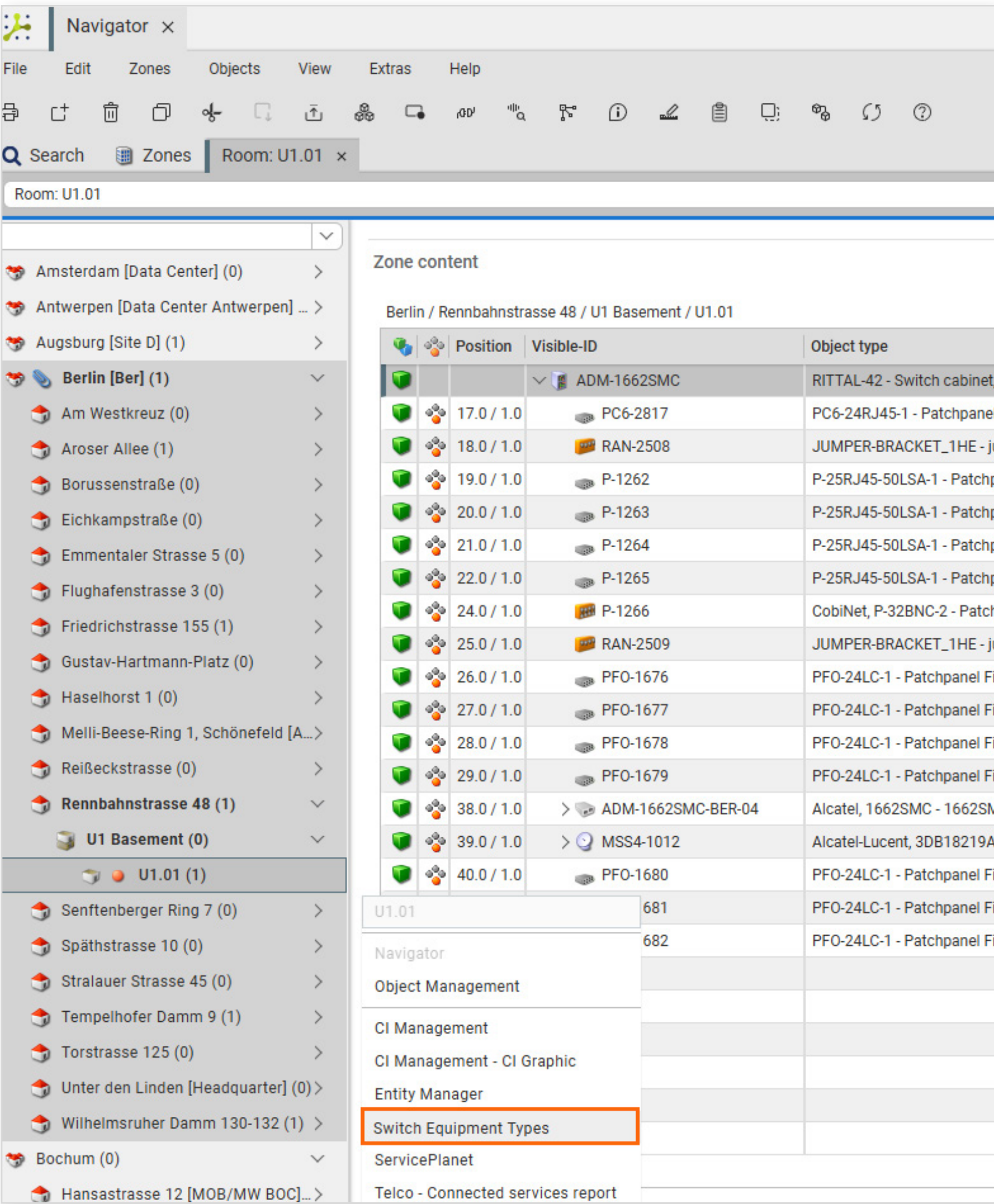
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Workflow execution starts directly in FNT Command, ensuring seamless integration

A typical approach involves assigning tasks to dedicated teams and monitoring progress in real time. Milestones can be defined and enforced to guarantee structured implementation and maintain accountability across all stakeholders.

In our example use case, the replacement is carried out site by site, following a standardized yet configurable process. Three separate implementation teams work in parallel, each responsible for a distinct subset of tasks. The use of customizable configurations ensures that the workflow can be adapted to local conditions and team-specific requirements – while still maintaining overall consistency and control.

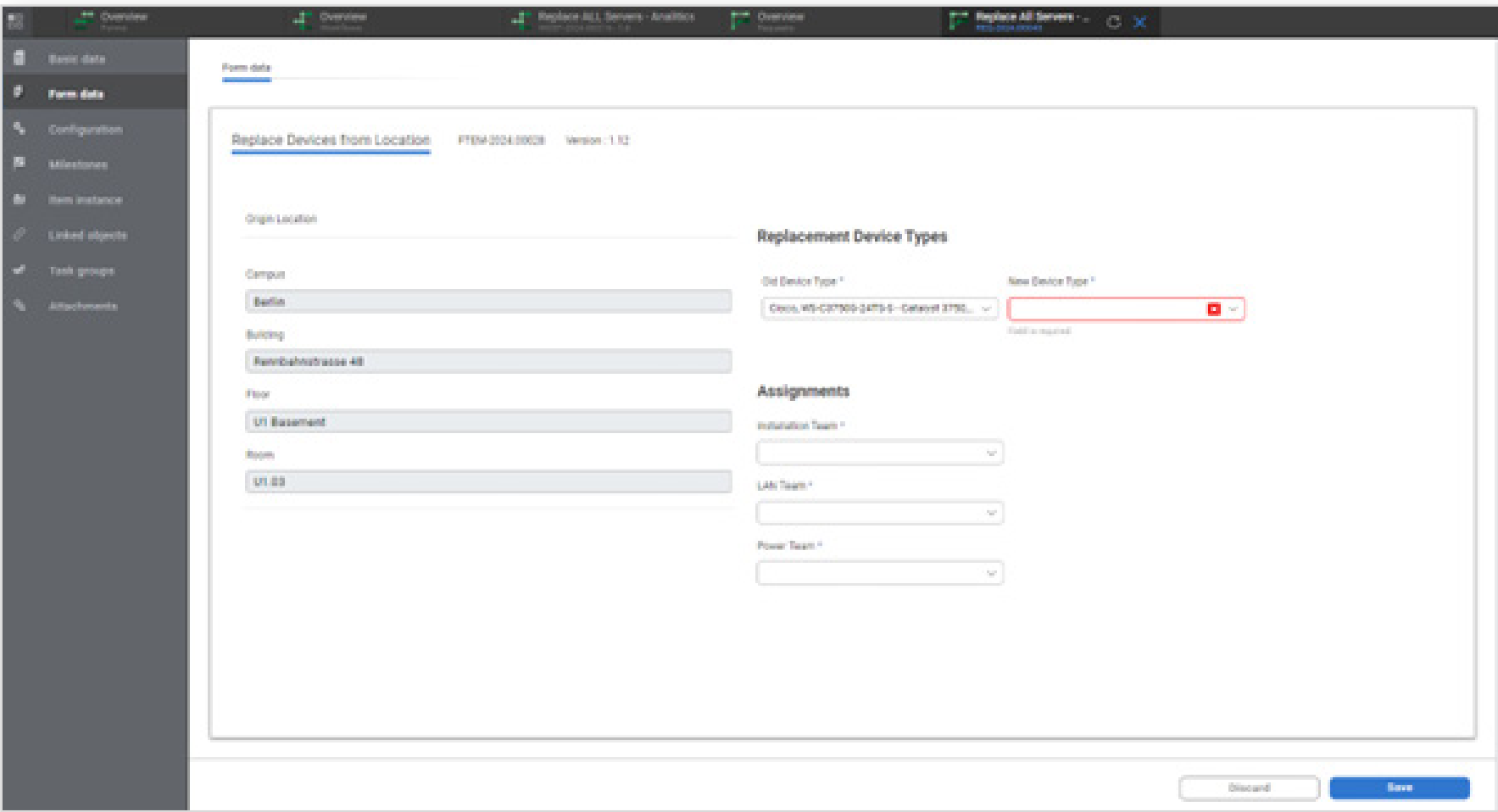
A structured, adaptable process with parallel teams ensures consistent, real-time monitored execution across all sites.



// simplify complexity

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The workflow is seamlessly integrated into the management tool and can be triggered directly via a right-click context menu – offering a highly intuitive user experience. This integration is fully configurable, allowing organizations to tailor the workflow to their specific operational needs and preferences.



Example for a custom form to support the bespoke workflow

Once the workflow is opened, users are presented with a pre-configured form specifically designed for this process. The form guides users through all required input fields and options, ensuring consistency and efficiency across all workflow executions.

Milestone Tracking:

We have defined the following milestones for this example:

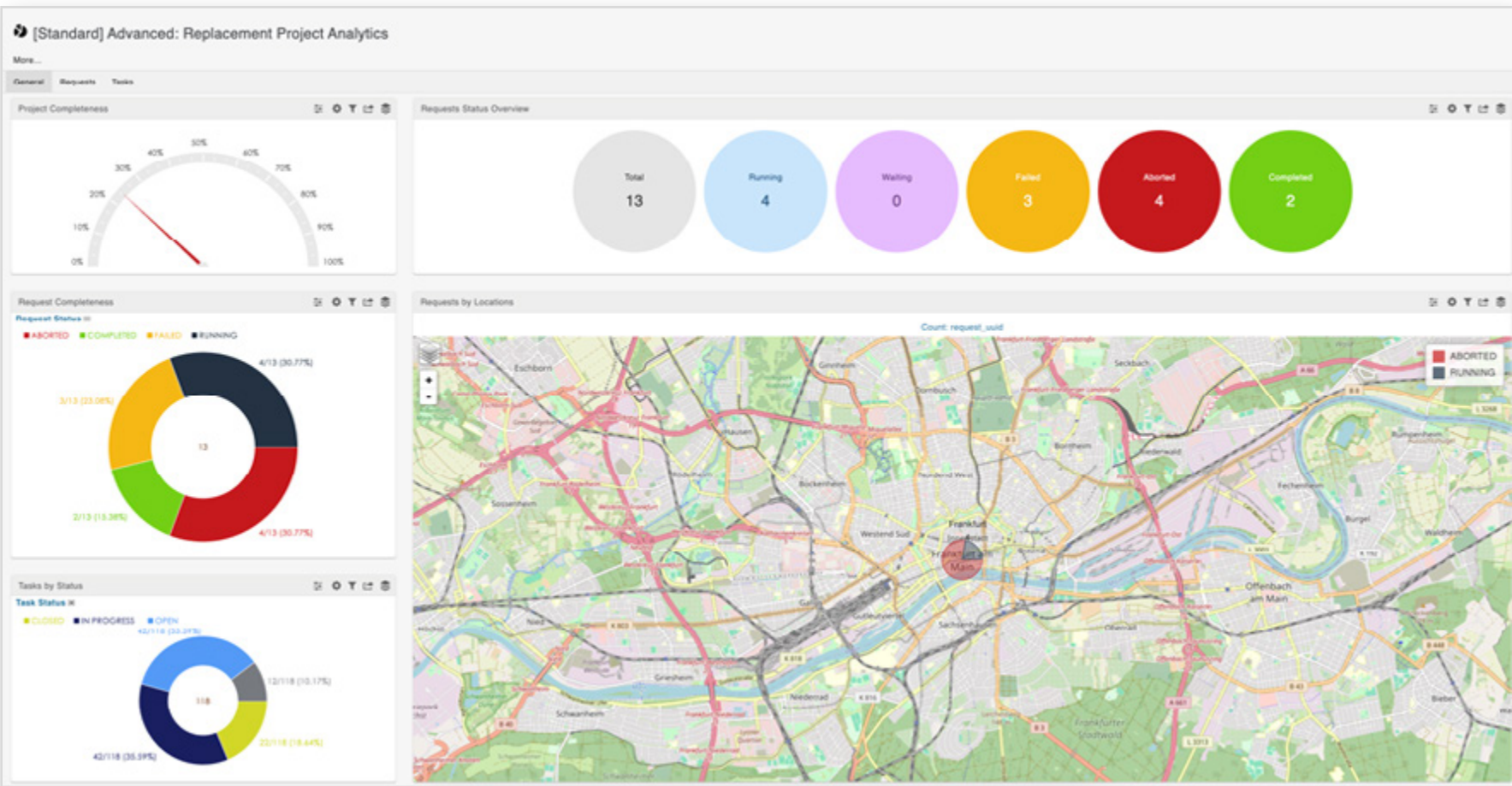
- 1. Planning Start:** Identify and map out all devices slated for replacement.
- 2. Planning Finished:** All obsolete devices are moved or decommissioned; new devices are placed in the designated sites within an active planning protocol.
- 3. Manual Execution Finished:** On-site teams physically complete replacements, finalize configuration.
- 4. Request Finished:** The planning protocol transitions to an “actual” state, confirming successful completion.

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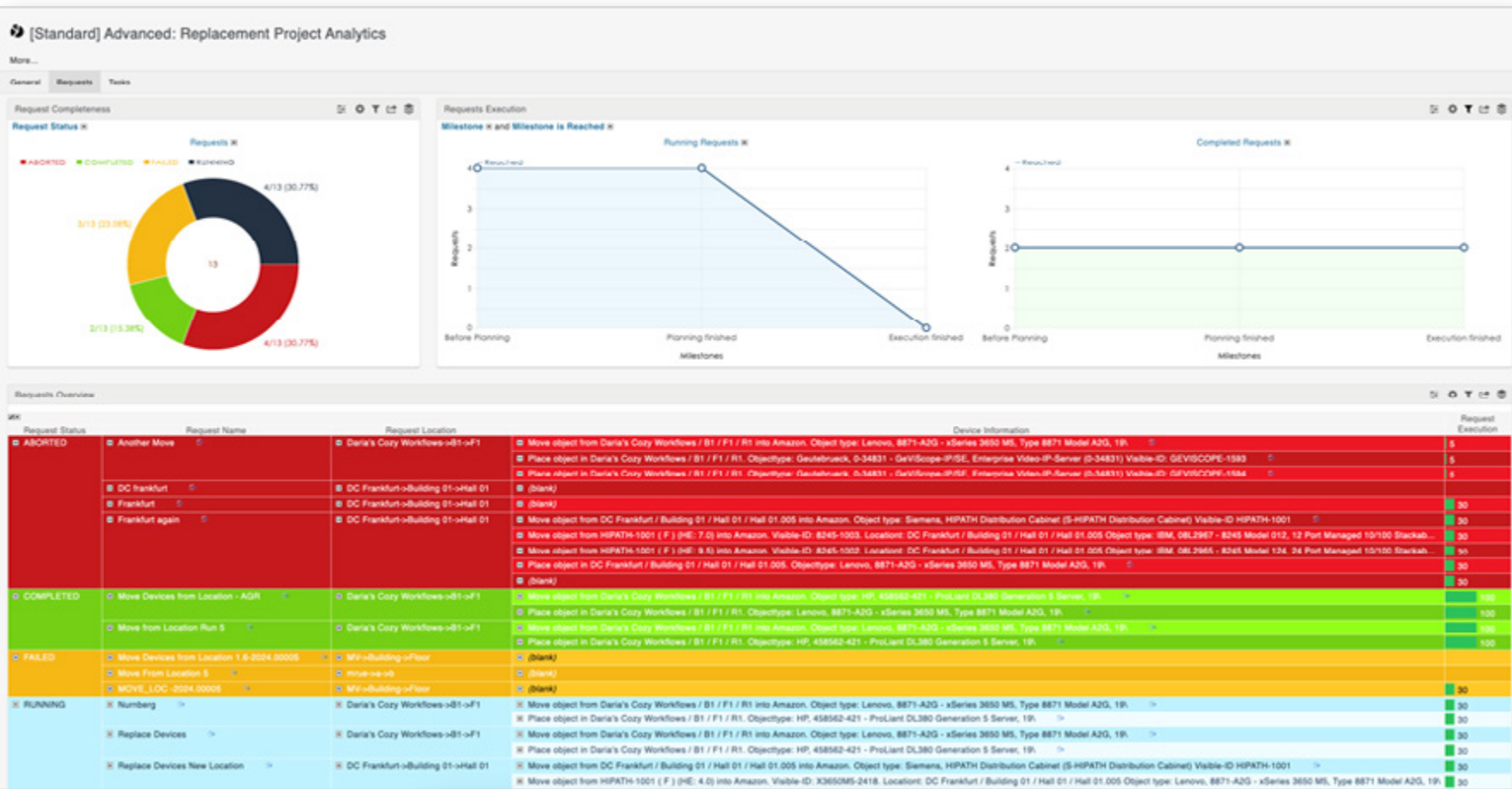
Real-Time Reporting & Dashboards

For our example we have configured the following:

Project Completeness Indicators provide a clear overview of progress across all involved locations and device types. These indicators help identify bottlenecks early and ensure that replacement activities stay on track. By offering real-time visibility, they support proactive decision-making and effective resource management.

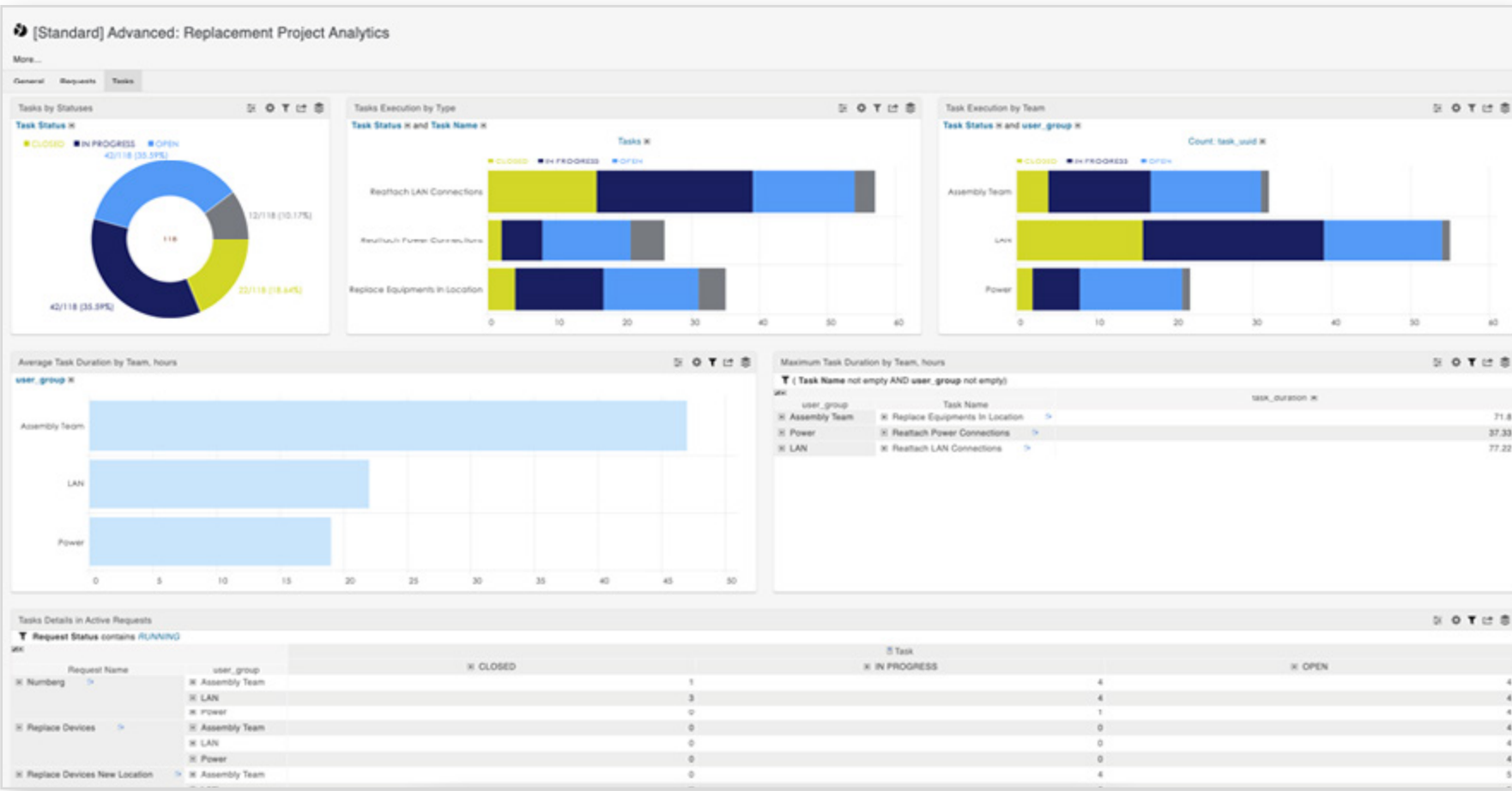


Milestone Analytics enable detailed tracking of how many requests successfully reach each stage of the workflow. This allows teams to quickly identify process bottlenecks and manage exceptions such as aborted or delayed workflows. The insights gained help optimize performance and ensure smoother execution.

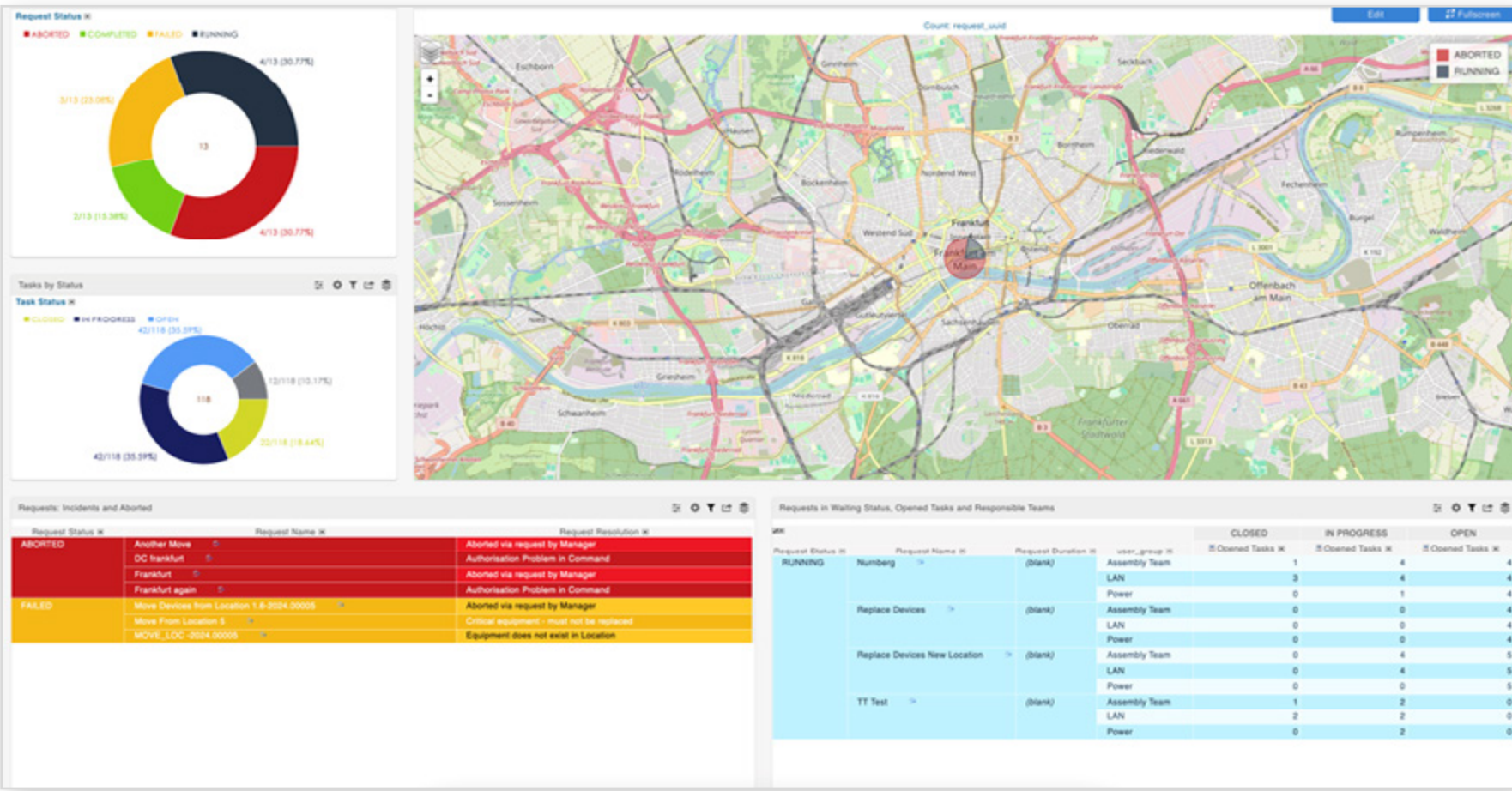


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Team Performance metrics allow comparison between average and maximum task durations to reveal inefficiencies or inconsistencies in execution. These insights help identify areas where additional resources or targeted training could significantly improve task completion times. Ultimately, this ensures more balanced workloads and faster project delivery.



Problem Area Identification helps quickly pinpoint failed tasks, overdue approvals, or recurring error patterns within the workflow. By highlighting these issues in real time, teams can respond promptly to disruptions and maintain overall process stability. This proactive approach minimizes delays and improves operational reliability.



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Implementation Steps

Best-Practice Planning Blueprint for Setting Up a Large-Scale Hardware Replacement Project.



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Unplanned, large-scale infrastructure replacements can be overwhelming and fraught with high stakes for both compliance and operational stability. FNT’s approach – centering on robust inventory management, workflow automation, and real-time reporting – positions organizations to respond decisively to unexpected changes. By adopting these best practices, businesses can reduce risk, control costs, and maintain a competitive edge even when forced into unplanned transitions.

FNT helps organizations handle unplanned changes with control, automation, and reporting to reduce risk and cost.

Thank you for taking the time to read this whitepaper and explore how a structured, workflow-driven approach can transform the way you manage unplanned infrastructure replacements.

If you’re facing a similar challenge or want to proactively prepare for unexpected hardware changes, we’re here to help. Our experts at FNT are ready to discuss your specific needs, demonstrate the capabilities of our integrated platform, and support you in developing a tailored strategy for your organization.

Contact us today to schedule a consultation or request a personalized demo.

Contact us

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About FNT

FNT GmbH, headquartered in Ellwangen (Jagst), Germany, simplifies the management of highly complex digital infrastructures in companies and public authorities with its FNT Command Platform. With the cloud-enabled “software made in Germany”, IT, telecommunications and data center infrastructures can be efficiently recorded as digital twins and documented across all levels from buildings to digital services. The software also offers open interfaces and numerous functions for planning, implementing and automating transformations and changes in an integrated manner. FNT’s customers include more than 500 companies and government agencies worldwide, including more than half of the DAX-40 listed corporations. FNT operates offices in several locations in Germany as well as in New York, Singapore and Timisoara and has an international partner system with market-leading IT service providers and system integrators.



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