Gradhoc brings system-level optimisation to existing refrigeration systems at Chillventa 2026

Refrigeration-native platform combines predictive diagnostics, thermodynamic modelling, energy intelligence and adaptive optimisation across existing multi-brand refrigeration infrastructure.

18 September 2026 — Gradhoc Smart will present its **Refrigeration Intelligence Platform at Chillventa 2026**, demonstrating how existing industrial and commercial refrigeration systems can progress from **read-only monitoring and predictive diagnostics to automatic real-time optimisation**.

Gradhoc combines refrigeration-specific monitoring, predictive diagnostics based on refrigeration behaviour, thermodynamic modelling, energy intelligence and adaptive optimisation in **one system-level platform**.

Rather than analysing individual assets, alarms or energy variables in isolation, the platform models **refrigeration behaviour and system interactions as a whole**, connecting thermodynamic performance, equipment condition, energy context and operating decisions.

From read-only visibility to automatic real-time optimisation

Gradhoc can initially be deployed in read-only mode, adding centralised visibility and refrigeration-specific analysis without interfering with the existing control architecture.

Deployment can then progressively evolve towards **predictive diagnostics, adaptive optimisation and automatic control**.

The customer defines which operating parameters Gradhoc is allowed to adjust and within which limits; once those boundaries are set, Gradhoc can act automatically in real time.

Depending on the installation and authorised control strategy, optimisation may include operating variables such as **suction pressure, superheat and system setpoints**.

A refrigeration-specific **thermodynamic digital twin** models system behaviour and interactions between the different elements of the installation, allowing authorised parameters to be continuously evaluated and adjusted within the customer-defined operating strategy.

Gradhoc also analyses refrigeration operating behaviour to identify **performance degradation, thermodynamic deviations and early-stage fault precursors**, transforming operational data and fragmented alarms into categorised, prioritised and actionable diagnostics.

System-level intelligence for existing infrastructure and maintenance teams

The platform integrates with existing **BMS, PLC, SCADA and metering systems without requiring their replacement**.

Its **multi-brand, multi-protocol architecture** is designed for heterogeneous refrigeration environments and allows Gradhoc to add a refrigeration intelligence layer to existing installations, including retrofit and brownfield projects.

Gradhoc treats **refrigeration performance and energy conditions as part of the same operating problem**. Alongside refrigeration demand and system behaviour, optimisation can incorporate electricity tariffs, photovoltaic generation, contracted capacity, grid-import limits and site-specific operating or energy constraints.

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Energy intelligence is therefore not treated simply as a separate consumption dashboard, but as part of the context used to understand and optimise refrigeration operation.

The platform is also designed to **work alongside existing maintenance providers**, giving their teams additional predictive and diagnostic capabilities while leaving existing responsibilities and control architecture in place.

Documented applications in industrial and commercial refrigeration

Gradhoc is already deployed across different refrigeration environments, with documented applications in industrial NH3 refrigeration, food retail and 24/7 frozen storage.

In an **industrial NH3 refrigeration application**, the optimiser adjusts operation according to refrigeration requirements and energy conditions, including electricity-price variations and defrost scheduling. In the published comparison between the month before and the month after implementation, **energy consumption was 41% lower after deployment of the optimiser**.

In a **commercial refrigeration application** in food retail, published project data show 35% lower energy consumption following optimisation and a **reduction of approximately 40% in compressor demand**.

In a **24/7 frozen-storage application**, Gradhoc added continuous monitoring and dynamic optimisation to the existing refrigeration system, incorporating electricity prices and photovoltaic generation into operating decisions. The documented application achieved an **approximately 18% reduction in total energy consumption**.

These figures relate to the specific installations and comparison periods described in each project. Results depend on system configuration, baseline performance, operating conditions and project scope and should not be extrapolated directly to other installations.

Gradhoc at Chillventa 2026

13.–15. October 2026
NürnbergMesse
Hall 4 · Stand 4-126

About Gradhoc

Gradhoc Smart develops a **refrigeration-native, system-level intelligence platform** for industrial and commercial refrigeration systems.

Gradhoc originated as a technology spin-off of Cofrico, drawing on more than 40 years of refrigeration and HVAC expertise within the Cofrico Group. The company operates internationally through direct projects and technical partners and is **ISO 27001 certified**.

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