

CONFIDENTIAL

Request for Proposal

Scale PLM – Teamcenter implementation

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1. Introduction

thyssenkrupp nucera (NCA) is a global leader in providing Chlor Alkali (CA) and Alkaline Water Electrolysis (AWE) plant technology. Our vision is to be the #1 provider for hydrogen and chlorine technologies. While headquartered in Dortmund Germany, we are a global organization with offices in seven countries and counting over 400 employees.

1.1. Company Introduction

thyssenkrupp nucera is a subsidiary of the German industrial engineering and steel production multinational conglomerate thyssenkrupp and is co-owned by De Nora, an Italian multinational company that is specialized in electrochemistry.

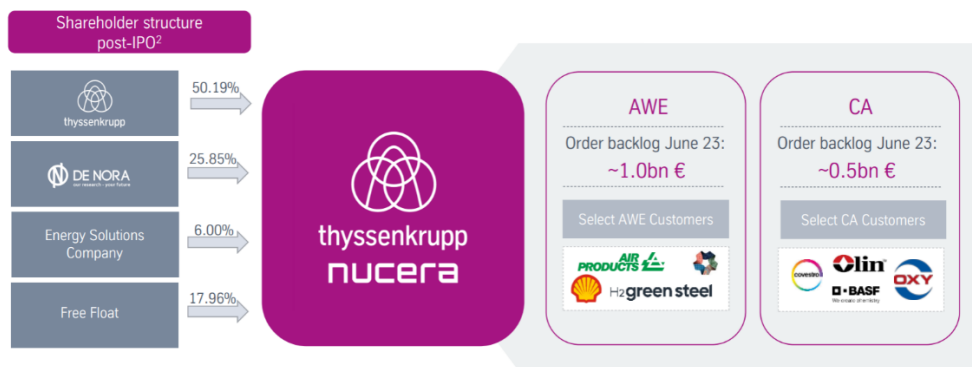


Figure 1: thyssenkrupp structure

Our roots are in CA, in which we have gained profound experience over the years. CA chemical products (Caustic Soda, Chlorine, and Hydrogen) are essential for many end products such as soap, aluminium, or polycarbonates. In 2021, we captured almost half of the global market for CA membrane electrolysis in terms of installed capacity in operation. The large installed CA base provides meaningful and stable services revenue potential.

We consider our expertise in CA electrolysis technology to be a strong basis for the growing AWE business. By leveraging CA cell technology, we have worked with De Nora to develop an industry-leading alkaline water electrolyser cell design. The AWE cell elements are embedded in a highly scalable module concept to match highest market demands. Our 20 MW electrolyser unit is specifically designed for industrial projects. Multiple units can be combined to form highly scalable GW plants.

Water electrolysis links the renewable energy sector to a wide range of industries, making it a critical element in industries' efforts to decarbonize. If only renewable energies are used in the production, the emissions from the production of so-called green hydrogen are practically zero. 93 countries have adopted a net zero target, while

countries representing over 80 % of global GDP plan to enter the hydrogen economy by 2025 with a dedicated strategy. It is expected that the worldwide hydrogen market will grow sevenfold from 950 GW in 2020 to about 5500 GW in 2050.

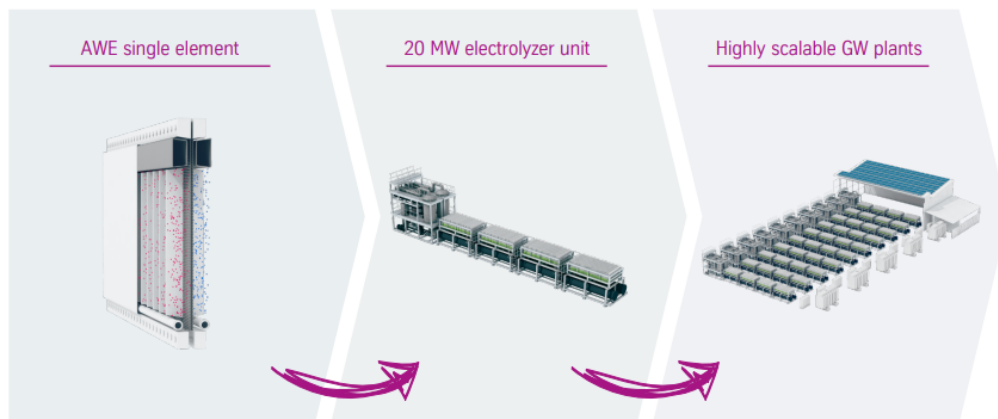


Figure 2: AWE Product philosophy

Lately, the strong growth of the hydrogen market has also resulted in strong growth for our AWE business. In the past years, we have secured projects with a total of more than 2 GW, and we are continuously working on further opportunities. This growth has led in 2021:

- to a ~70% increase of our German workforce,
- to opening of our offices in Perth and Riad,
- to our name change from UCE to thyssenkrupp nucera,
- to our decoupling of our former parent company Uhde, and

After opening our latest offices in 2021, we are located in Europe (Germany and Italy), the US, China, Japan, Saudi Arabia, and Australia. Including the offices of our partner De Nora, the list extends by offices in India and Thailand.

Main product development (engineering) activities are executed Today in Germany, Italy, Japan and India (Detailed Design partner). The other sites are also involved in the engineering processes but concentrated on the project execution specifics (engineering to order / stick build) but it is planned to expand the global engineering resources also in those sites and thus all sites need to be supported by the future toolset.

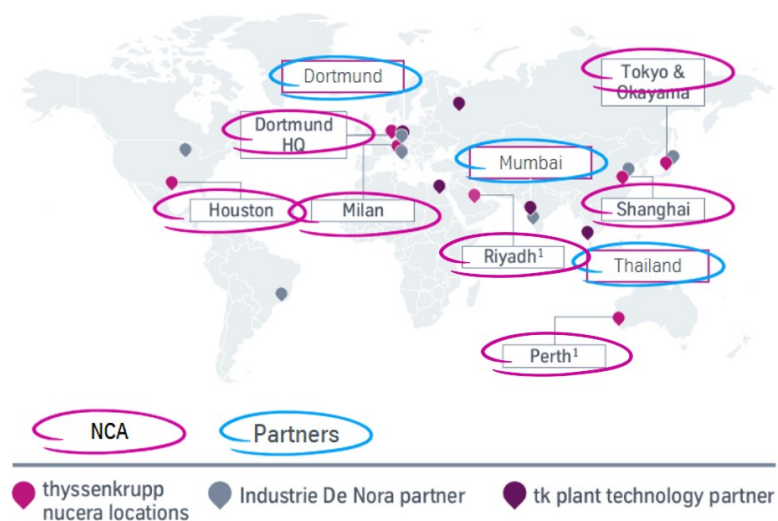


Figure 3: Global sites

1.2. SCALE program overview

In addition to our robust growth, we successfully conducted our IPO in 2023, and our ongoing business activities are placing demands on our internal resources. Moreover, we are challenged by changes to our processes and operating model. While CA business is a project driven customized business for stick build plants, the AWE business is implementing our standard 20 MW product in module-based skid mounted plants. This enables us to scale up our AWE business but forces us to extend our CA project-based mindset towards a product-based thinking for our AWE business in various aspects. Important to understand is that although product-driven, the AWE projects also have, with extended scope, a hybrid project character with customized elements.

However, our processes are not based on product business but reflect our traditional customized CA project business. Hence, we need new processes for our AWE business. With the rapid growth and new process needs (e.g. serial production) we are forced to challenge today's processes, to properly document the processes, and to drive the implementation of adapted or newly created processes.

For those reasons, the transformation program "Scale NCA" has been launched in 2022 with the overall target to enable the scale up of our AWE business while also strengthening our CA business. It aims to achieve the following objectives:

- To further detail and implement our **product structure** for the AWE business
- To create and adapt our **processes** for our AWE **product business**
- To both adopt to the newly added processes and product business as well as emancipate from our legacy **tool landscape** to **one worldwide tool landscape** with certain freedoms
- To **culturally** extend our traditional thinking of a customized project-based business to a product-based business

In phase one of “Scale NCA” we defined the fundamentals of our future IT and process landscape, defined the core business concept and developed a product structure and overall PLM roadmap. In phase two defined our global E2E-processes and selected new tools for our ERP (MS Dynamics) and Engineering authoring (Siemens Comos) capabilities. In phase three we are starting the implementation of the selected tools for ERP and Engineering and want to select a Service Provider which supports us in the implementation development of our existing Siemens Teamcenter solution. Each of the three transformation activities will be structured as individual projects, with the program overseeing and coordinating these projects.

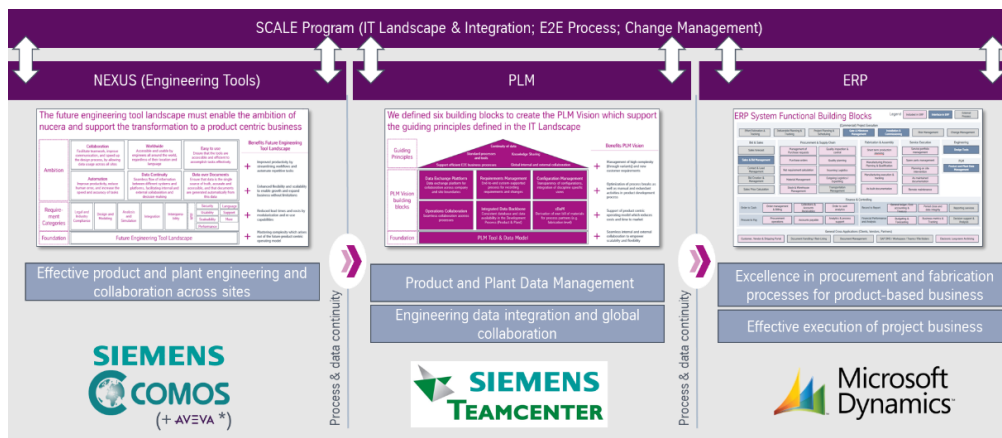


Figure 4: Overall program structure

During the comprehensive implementation phase, Phase 3, spanning from September 2023 through September 2024, our primary focus lies in the successful deployment of minimum viable products (MVPs) within the individual projects. Additionally, we are diligently establishing the pivotal interfaces connecting various systems to ensure seamless integration and operational efficiency:

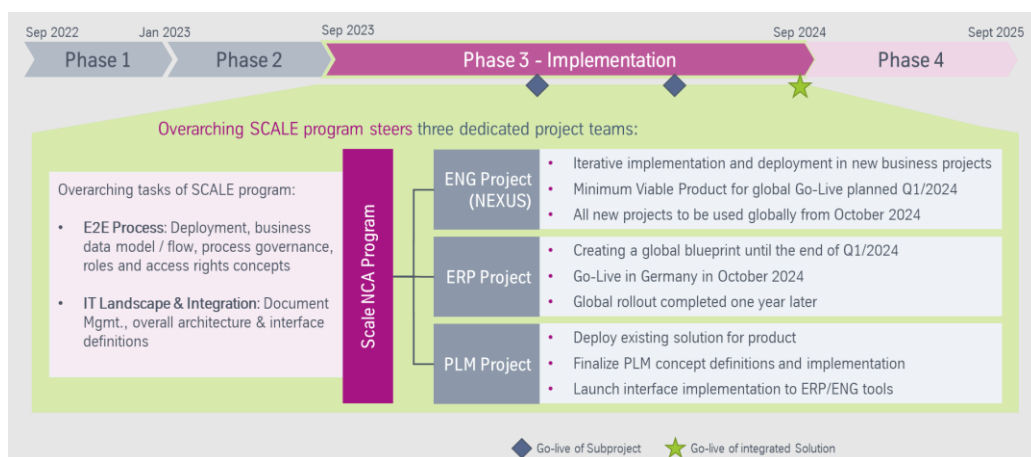


Figure 5: Scope of SCALE program and its projects

In our pursuit of establishing a robust and highly effective governance framework, we have thoughtfully delineated a set of governance procedures. These procedures serve as the cornerstone of our governance architecture, providing clear, structured guidelines for decision-making, accountability, and oversight. The following governance processes have been designed, ensuring that our organizational endeavors are guided by best practices and transparency:

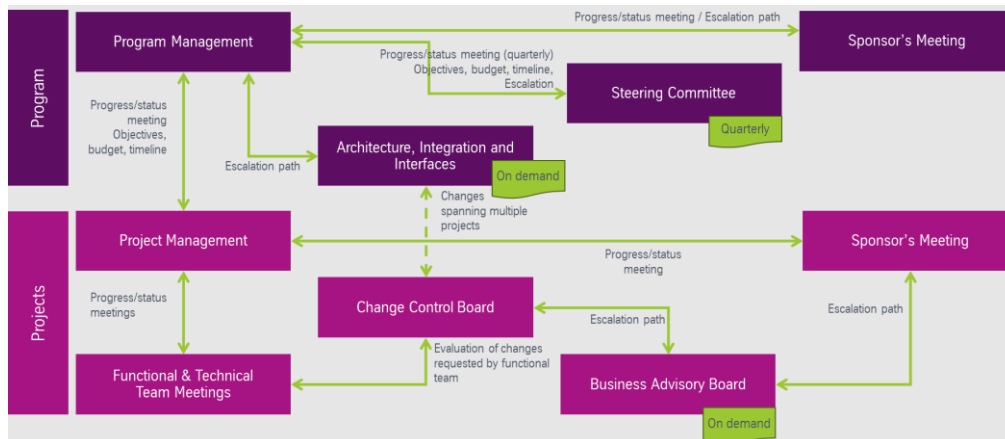


Figure 6: Governance process

While this is one of the most important projects to our company, one of the major challenges is that, due to rapid growth, our organization is running at its capacity limits. Hence, we partnered up with Mews Partners¹, a consulting company with fundamental experience in these areas, to guide and support us in the successful conception and implementation of this program.

1.3. As-Is and target situation

“Scale NCA” not only aims at introducing a new IT-Tool landscape but also at redefining the business processes to adapt to the strongly growing product-based AWE business. Therefore, the requirements for the continued advancement of our Siemens Teamcenter strongly depends on these newly defined processes.

1.3.1. Business processes

The As-Is situation regarding the various processes at NCA result from the “Stick Build” processes inherited from our predecessor companies. As a result, today’s processes primarily reflect current organizational units rather than actual processes. Furthermore, since they developed out of our project-based CA business, they are not oriented towards our product-based AWE business.

As part of “Scale NCA”, we aim at introducing major changes to our business processes setup. The newly defined E2E processes combine all activities from all required actors independent of their organizational origin. By introducing the new

¹ represented by MEWS Deutschland GmbH, Mühldorfstraße 8, 81671 München

processes “Product Portfolio Management” and “Product Development” we leverage strategic development decisions and drive the continuous development and qualification of standard products.

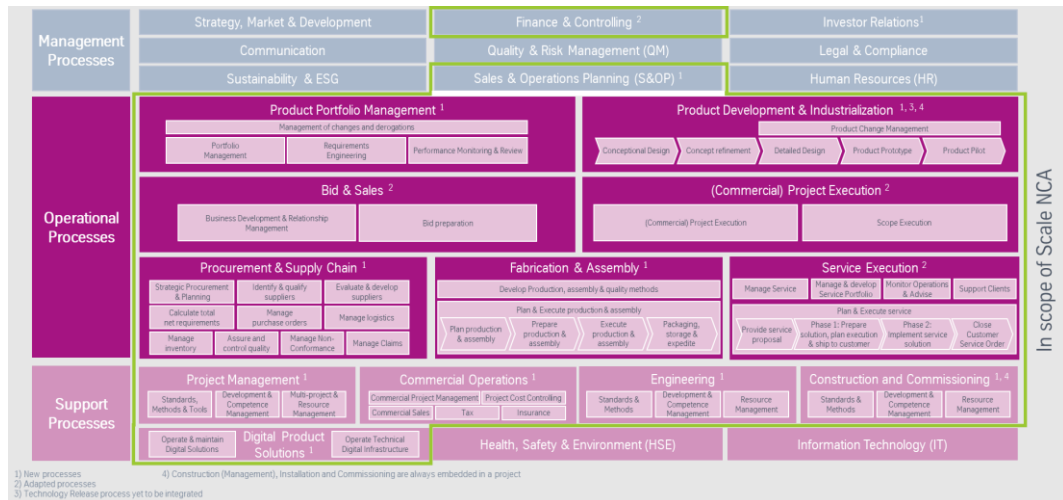


Figure 7: To-Be process landscape

1.3.2. Product development process landscape

To provide a more comprehensive insight into the envisioned future of our product development process, we will delve further into the core processes of 'Product Portfolio Management' and 'Product Development & Industrialization'.

The primary objective of 'Product Portfolio Management' is to establish a standardized and structured approach to future product development. This involves the continuous refinement of new product features and ideas, ultimately leading to the definition of a well-defined package and a clear set of requirements for specific product development programs. This definition includes considerations such as stakeholders, timelines, staffing or budgetary allocations:



Figure 8: Product Management Process

After defining the “charter” for the product development program the process of “Product Development & Industrialization” starts. The main goal of this process is to make sure that the development of new products or components is done in a concurrent manner by all involved disciplines (e.g. Engineering, Fabrication, Procurement, Supply Chain):

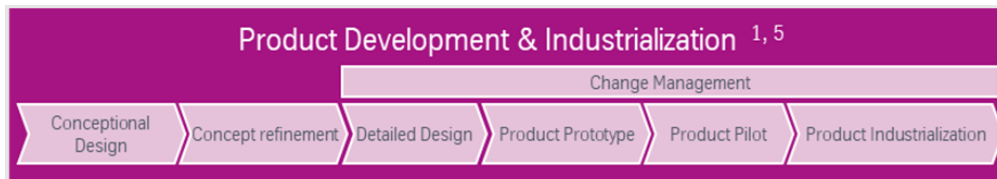


Figure 9: Product Development & Industrialization Process

After the refining of concepts the detailed design starts including a concurrent evaluation of the downstream disciplines. With reaching the milestone “Product Prototype” the physical or virtual testing of components for internal verification as well as industrialization activities from downstream disciplines start. The following milestones are dedicated to the serialization ramp-up. With reaching the milestone “Product Pilot” the components can be used for the first commercial use within a client project. The aim is to start with one client in the pilot phase and to increase the number of clients up to five within the “Preseries” phase. With reaching the milestone “Series Release” the components are ready to be used by all commercial projects without any engineering efforts (configure-to-order components).

As previously mentioned, the industrialization process necessitates organization through client projects, resulting in the following division of activities between the product and project disciplines:

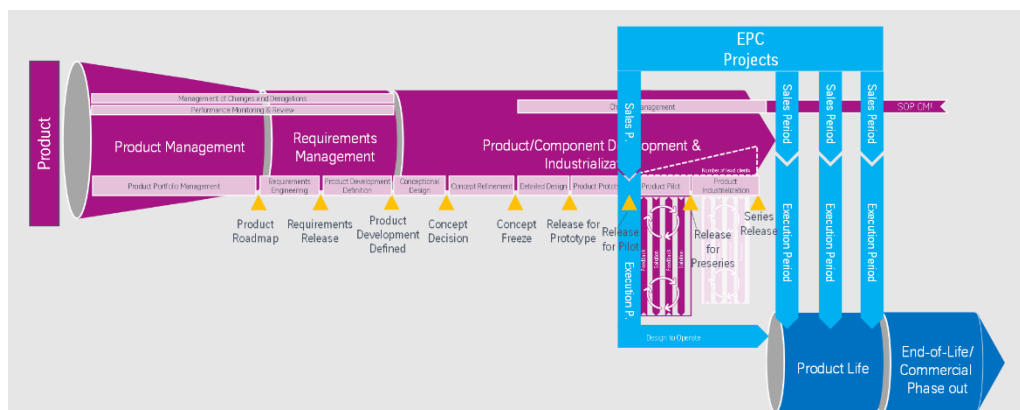


Figure 10: Product lifecycle process

1.3.3. IT-Tool landscape (To-be)

In this section, we present a detailed overview of our vision for the to-be IT landscape, encompassing key use cases and the associated systems. Our goal is to establish a modern, adaptable, and efficient digital ecosystem that seamlessly aligns with our strategic objectives.

Our use cases serve as the foundation for our IT landscape requirements:

Use Case 1 - New Product Development: This scenario involves product management initiating the development of a standard product, marking its first introduction to our catalog.

Use Case 2 - Standard Product Order (1x): A client places an order for a single standard product from our catalog.

Use Case 3 - Standard Product Order (n times): A client orders multiple instances (n times) of a standard product.

Use Case 4 - Standard Product Order with Integration: A client orders multiple standard products and requires an integration concept, specifically for Balance of Plant considerations.

Use Case 5 - Individual Plant Order: In this scenario, a client places an order for a customized individual plant.

Use Case 6 - Service Request: This use case encompasses various service scenarios, ranging from minor maintenance to major overhauls. Systemically these scenarios can be described by use case 1 to 5.

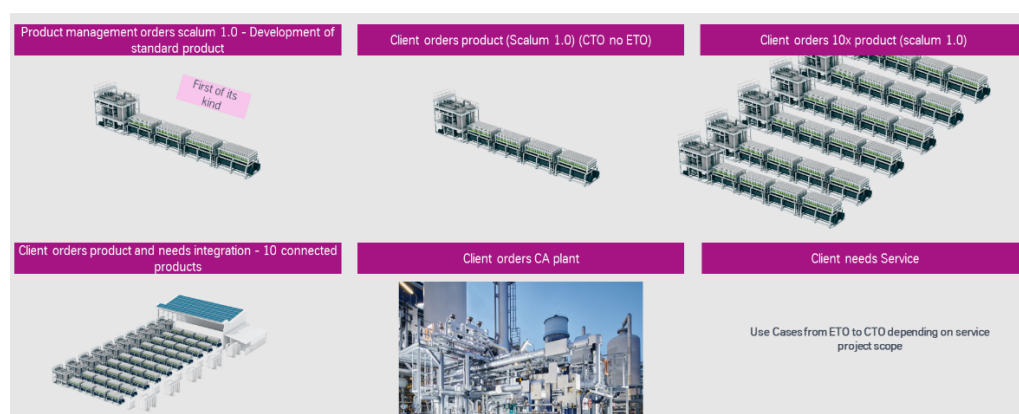


Figure 11: Use Cases for IT Architecture (illustrative).

These use cases drive the design and functionality of our IT landscape, which includes the following critical systems:

ERP – MS Dynamics: This system is central to project execution and controlling as well as order execution and financial, supplier and material master activities, to ensure seamless processing and fulfillment.

PLM – Siemens Teamcenter: As our single point of truth, Teamcenter manages engineering Bill of Materials (eBoM) and manufacturing Bill of Materials (mBoM) for standard products and projects to ensure data consistency.

It is expected that the (initial) project specific product configuration based on predefined variants (150%) is executed in Teamcenter and then distributed to Comos (in case of need for integration or missing / engineering-to-order components – assumption via variant rules and configuration in Comos following same ruleset, tbc.

based on Service Providers Comos interface concept)) as well as towards ERP (configured mBOM).

Authoring - Comos: Siemens Comos plays a key role in the thyssenkrupp nucera engineering processes, enabling plant design and configuration as well as the “instantiation” for documents. The main information objects for the interface to Teamcenter are documents, specifications, BoMs for instruments and electric for as well as non-product objects (BoP). Teamcenter must deliver general variant rules and specific configurations to Comos.

Authoring - Aveva ERM: ERM serves as an authoring system for engineering, particularly in the context of piping and supports as well as planning of MTOs. The main information objects for Teamcenter are BoM elements for piping.

Authoring - Aveva E3D: This system is instrumental in layout and piping engineering. The main information objects for Teamcenter are 3D objects related to piping, supports and TEKLA models.

Authoring – TEKLA: TEKLA is a critical authoring system for civil engineering. The main information objects for Teamcenter are BoMs for civil, concrete and steel components. Future consideration of Tekla 3D data to setup a full DMU in Teamcenter is to be discussed throughout the project.

Authoring – Solid Edge: Solide Edge (already integrated into Teamcenter functionalities) is our tool for developing our core product component, the electrolysis cell.

Authoring – Autodesk AutoCad: Used for several drawing as plant equipments, Layouts, etc. ...

DMS – Document Management System: Used to store the relevant documents from all participating systems. The DMS selection is currently in RfP phase as well.

Teamcenter is the center for BoMs and the core interface between Authoring and ERP

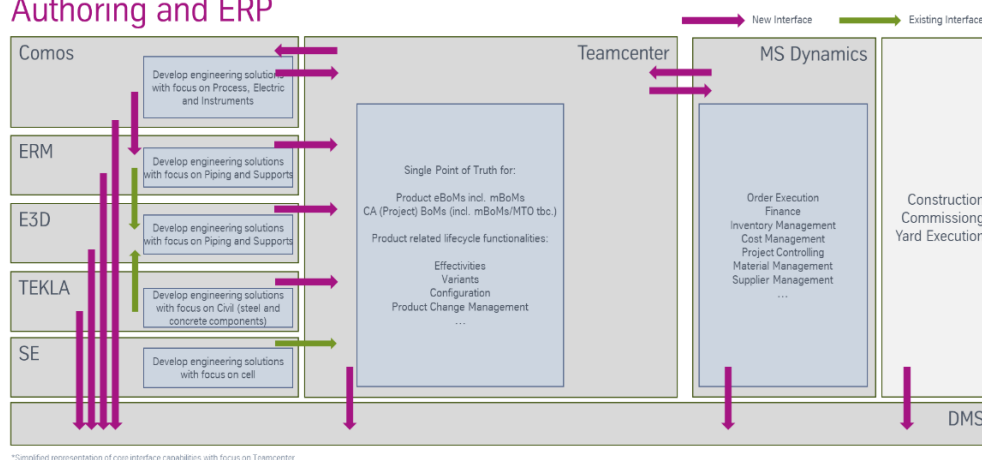


Figure 12: High level representation of interface capabilities with focus on Teamcenter.

1.3.4. Current status of Teamcenter implementation

In this chapter, we provide a condensed overview of the current state of our Teamcenter implementation. This strategic initiative is at the forefront of our digital transformation, enhancing collaboration, data management, and efficiency throughout the organization.

- **General Initiation:** General implementation of Teamcenter, we are currently updating Teamcenter from version 12 to version 14, the plan is to finalize the update until the end of 2023. Teamcenter is currently set up on physical servers (tk Uhde). After update to version 14 Teamcenter is setup in a private cloud and accessible via virtual machines and as shared app.
- **Initial Data Migration:** First focus for the data migration was related to objects for the cell development (migration from folder-based CAD structures to Teamcenter database), currently we are completing the BoM of our standard product by migrating all module related instruments, electrical parts as well as piping and civil objects.
- **Release Workflows and Lifecycle Templates:** Implemented workflows and templates standardize product development, streamlining approvals and transitions. There are already several workflows in operational usage for cell development design solution approvals and for further qualification / serialization steps (e.g. prototype release, pilot release, series release)
- **Global Rollout for Cell Development:** A global rollout for the cell development, cell implementation (work preparation & technical procurement), service, sales and cell specific design work for customer orders was conducted. Teamcenter is currently used in Germany in essence in combination with Solid Edge for cell product design work. IN the USA, Japan, China and Italy Teamcenter Active Workspace is used for consumer purposes. For the future we are planning to use it at all our locations.
- **Data Model and Categories:** Our current data model includes various categories, such as L_Items (logical), F_Items (manufacturing), M_Items (Raw materials), E_Items (engineering), S_Items (standard parts), and D_Items (documents).
- **Engineering and Manufacturing Views:** Specialized views enhance productivity and accessibility for stakeholders (currently only for parts of the electrolyzer module).

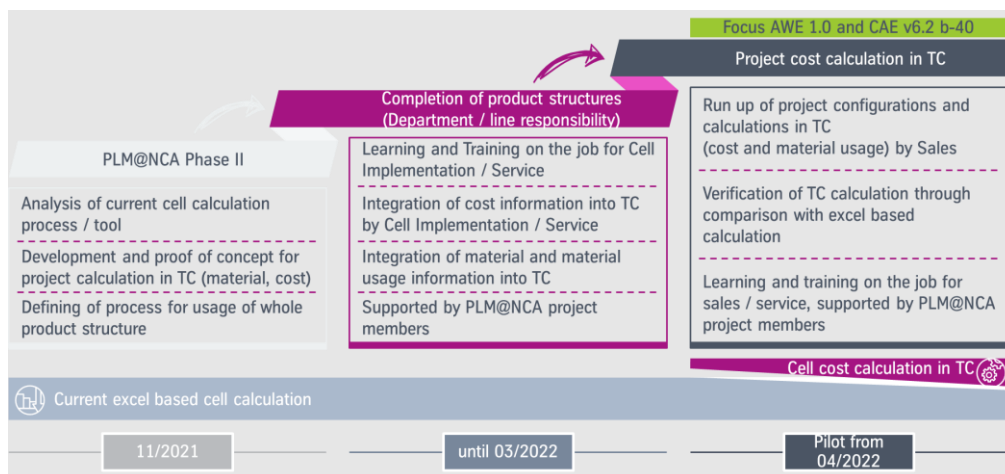


Figure 13: Previous PLM@nucera project stages

This summary serves as an abstract of Teamcenter's functionalities. For comprehensive details, please refer to “1B_Annex_Teamcenter current status of development”.

ATTENTION: It is expected that Service Provider include the existing functions as baseline in their solution design. While some of the current functions may be redesigned or even obsolete throughout the course of the future Overall architecture implementation it is NOT indented to start “from scratch”.

1.4. Project planning overall SCALE programm

The success of our PLM initiative hinges on its seamless integration with the broader program, particularly the key milestones within our ERP and Nexus projects. As we embark on this transformative journey, it is imperative that the timelines and objectives of our PLM efforts are closely synchronized with those of our ERP and Nexus initiatives. This alignment ensures that data, processes, and systems harmonize across the organization, fostering an environment of efficiency and collaboration. Our commitment to program-wide coordination reflects our dedication to achieving holistic and impactful digital transformation.

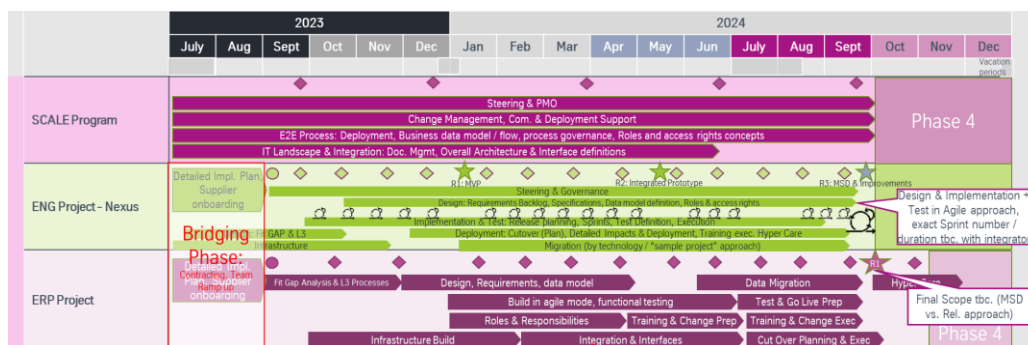


Figure 14: Overview of overall program plan.

It is critical to preserve the schedules of our interconnected projects, especially concerning interface requirements. Therefore It is crucial to plan the PLM project resources so that the PLM project outcomes are finished in a timely manner.

1.5. Project planning PLM

The project plan for the upcoming initiative is structured across several pivotal phases. Starting in January and extending through May, our primary focus will be on the definition and deployment of critical interfaces, a task of the utmost priority. Concurrently, we will address topics from the PLM core backlog, ensuring they align with their respective dependencies.

From June to August, we will shift our attention to the definition and development of remaining PLM core topics, comprehensively covering all essential aspects.

The months spanning September to December will be dedicated to a series of improvement sprints, fostering ongoing refinement and optimization.

Furthermore, in anticipation of 2025, we have prioritized additional backlog items. Notably, these items are outside the current scope of this tender, exemplifying our commitment to forward-thinking planning and project excellence.

This project plan is meticulously designed to ensure a structured, efficient, and agile execution, reflecting our dedication to achieving project objectives with precision and foresight.



Figure 15: Project plan Scale-PLM.

Our project is structured to embrace the Scrum framework, fostering an environment of agility, collaboration, and iterative progress. The project unfolds through well-defined ceremonies and artifacts, ensuring clarity, transparency, and efficiency throughout.

Scrum Ceremonies:

- **Sprint Planning:** Each sprint begins with a half-day sprint planning session, where the team defines the scope and objectives for the upcoming sprint.
- **Daily Scrum:** Daily standup meetings keep the team synchronized, fostering real-time communication and issue resolution.
- **Sprint Review:** At the end of each sprint, a dedicated demo and test session is conducted with stakeholders to showcase the accomplished work.
- **Sprint Retro:** A retrospective session provides a platform for the team to reflect on the sprint's outcomes, identifying areas for improvement.

Scrum Artifacts:

- **Product Backlog:** The product backlog serves as a repository for all project requirements, allowing for prioritization and planning.
- **Sprint Backlog:** Each sprint has a corresponding sprint backlog, outlining the specific tasks and goals for that sprint.
- **Increment:** After each sprint, an increment is delivered, representing the completed work that is potentially shippable.

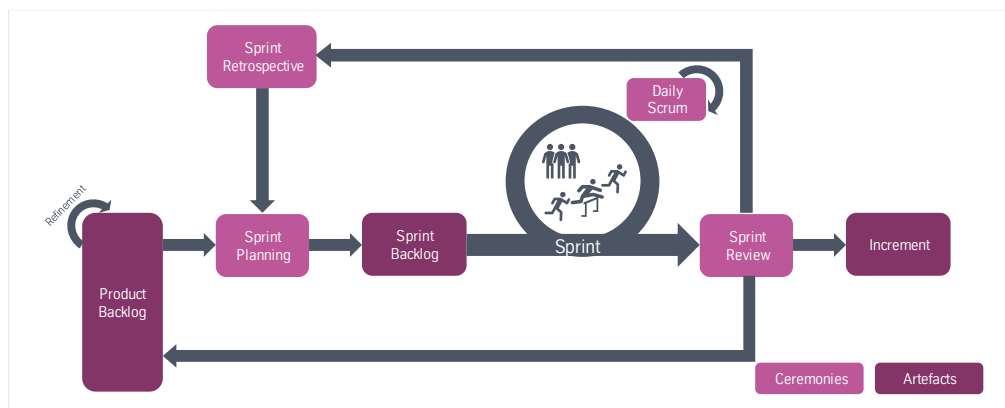


Figure 16: Agile project approach Scale-PLM.

Our project, particularly in regard to interface integration, is undeniably complex. To navigate this complexity effectively, we invite the Service Provider to propose an agile approach for the way of working. We believe that embracing agile principles will enable us to address challenges with flexibility, collaboration, and responsiveness. We look forward to the insights of Service Providers on how to best adapt to the intricacies of this project and drive its success.

For a detailed timeline on proposal & selection process refer to chapter 3.1.

1.6. Scope of Scale PLM

The purpose of this Request for Proposal (RFP) is to identify a Service Provider who can support us with the expansion of our PLM Teamcenter to support our business model and operations by realization of required interfaces as well as developing our core Teamcenter processes further. The future PLM must enable us to efficiently scale our resources and knowledge to address the approaching challenges. To tackle these challenges, we created the following PLM vision, which is the core for our transformation plans:

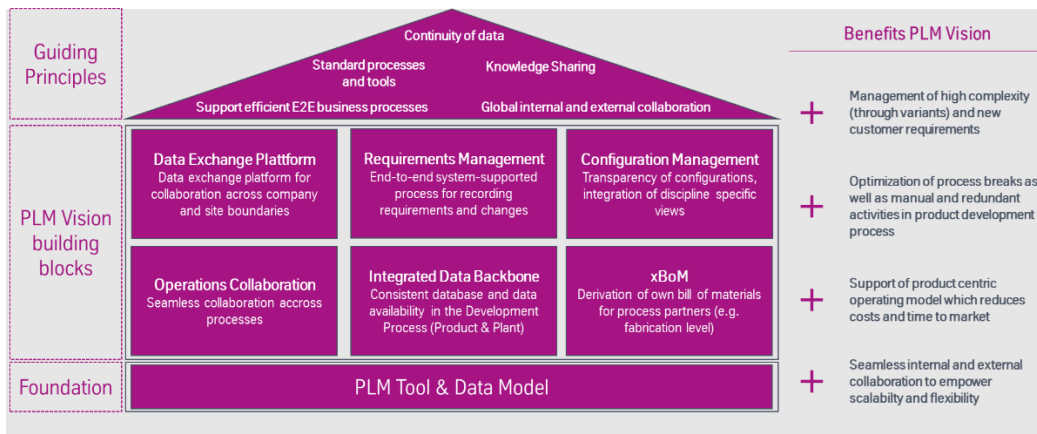


Figure 17: PLM Vision

In alignment with the articulated vision, we have formulated a strategic roadmap that delineates key initiatives integral to our forthcoming PLM endeavors. These initiatives have been rigorously prioritized to ensure congruence between the initial implementation components and the overarching program scope, as well as to synchronize them with the go-live activities across concurrent projects.

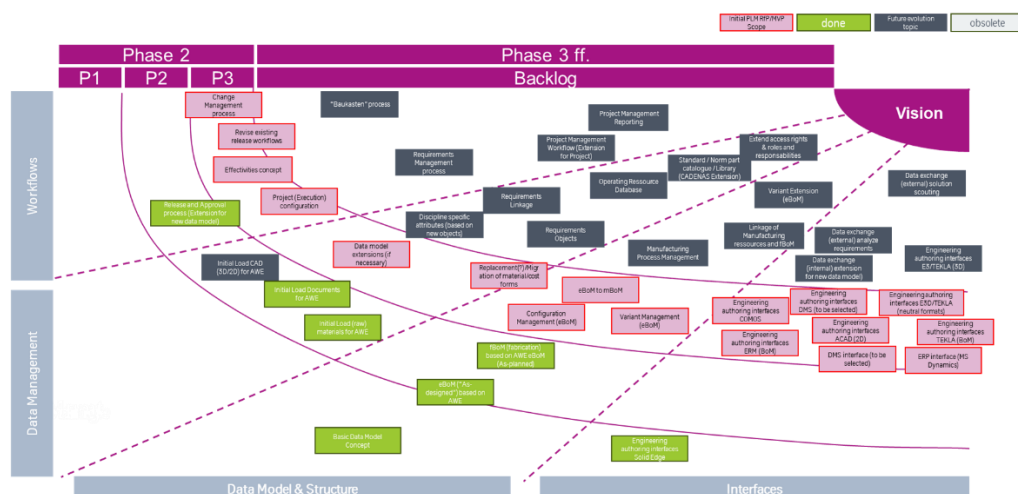


Figure 18: PLM Roadmap

The red-outlined boxes highlight the core focus of the next phase, which is elaborated upon in the following section on functional requirements. As part of our agile approach, we've created Epic stories for each block in the graphic, along with User stories that provide context and criteria for what each story aims to achieve. These stories have been organized and prioritized in Azure DevOps, our primary documentation system for the upcoming implementation phase.

Note: While the Service Provider is free in organization of their own development toolset & pipeline we expect usage of our DevOps as single source of truth for and requirement definitions & agreement on scope (e.g. sprints) etc. It will also used to document and track any possible deviations (bugs). Therefore access to the backlog can be granted to Service Providers team members if required by their role within the project.

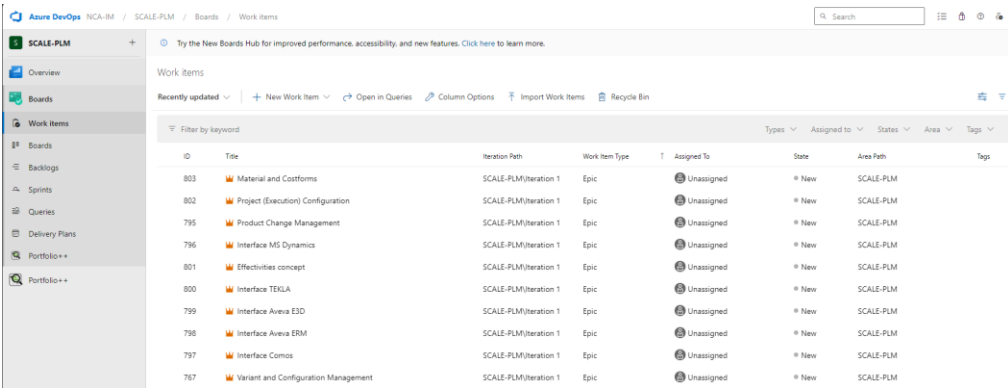


Figure 19: Snapshot of DevOps board.

1.7. Responsibilities

This chapter outlines the division of responsibilities among key stakeholders in our project. It's essential to establish clarity regarding who does what. To achieve this, we've included a RACI matrix in our documentation. This matrix provides a structured view of the roles and responsibilities shared among thyssenkrupp nucera, the external consultant company Mews Partners, and our future external Service Provider for this endeavour. This delineation of responsibilities is pivotal for effective collaboration and ensuring the project's success.

Tasks	TKN	Mews	Service Provider
Analyse & Design			
Assure business architecture of PLM system and adherence to business processes	A	R	C
Assure functional architecture of PLM system	A	C	R
Define L3/L4 processes (based on Service Provider's process map)	A/C	R	C
Prepare Fit-/Gap analysis and workshops	A/C	C	R
Define functional requirement and clarify with business	A/C	R	C
Define user stories	A	C	R
Define functional solution responding to requirement (incl. technical realization)	C	C	A/R
Prepare integration strategy & design	A/C	C	R
Define interface strategy and functional design	A	R	C
Define technical interface design	C	C	A/R
Define access rights and roles	A/C	C	R
Review infrastructure concept	A	R	C

Oversee performance tests of tool	A	C	R
Business Data model definition	A	C	R
Technical Data model definition	C	C	A/R
Define Migration strategy	A	R	C
Define Migration rules	A	R	C
Define mapping for migration and technical solution for migration	C	C	A/R
Coordinate data cleansing with business	A/C	R	C
Test strategy and test cases	A	R	C
Training plan	A	R	C
Interface definition and development	C	C	A/R
TEKLA IF	C	C	A/R
COMOS IF	C	C	A/R
E3D/ERM interface	C	C	A/R
MS Dynamics IF	C	C	A/R
Autodesk ACAD IF	C	C	A/R
DMS IF	C	C	A/R
Solid Edge IF	A/R	C	C

With A= accountable (takes final decision / accountable towards Nucera project and program responsible), R=responsible (for task execution in time and quality), C=Consult (can provide additional inputs)

2. Functional and non-functional scope of Scale PLM

2.1. List of functional Requirements

For every requirement, please provide an assessment of the level of conformity of your solution (included in standard, customization / configuration required, custom programming required, not supported, alternative solution proposed (please specify)). In the requirements assessment, please highlight also any requirement which causes a major cost driver in your offer (e.g., need for additional modules, major customization).

Note: Service Providers are free to propose an architecture/ solution concepts but shall clearly indicate impact & compliance with the requirements listed underneath (e.g. if an out of MVP scope epic is proposed to be addressed earlier or if the proposed architecture does not support requirements as stated but would require “modifications” to requirements. In that case clear description of capabilities & limitations in written RfP reply is required.

List of epics in Scope of this proposal

- Variant and Configuration Management
- Product Change Management
- Interface Document Management System
- Interface MS Dynamics
- Interface Comos
- Interface Aveva ERM
- Interface TEKLA
- Effectivities concept & precise imprecise structures
- Project (Execution) Configuration
- Material and Costforms
- eBoM to mBoM transformation
- Interface ACAD
- Revise existing release workflows
- Engineering authoring interfaces E3D/TEKLA (neutral formats)

Future reference Epics (out of scope)

- Interface Aveva & TEKLA (native 3D)
- Requirements Management

Refer to 1.3.3 for more details on the planned interfaces.

Please refer to Annex 2: List of Epic and User Stories.

3. RFP Assessment

3.1. Administrative & Timeline

In this chapter, we present the key administrative details and a timeline for the PLM Implementation Project. The project spans from the initial Request for Proposal (RfP) to the anticipated Go-Live date in September 2024.

Activity	Date
RfP Issuance	October 31, 2023
Q&A Session	November 10th, 2023
Proposal Submission Deadline	November 17th, 2023
Pre Selection	November 22nd, 2023
Presentations (of pre selected Service Providers)	November 30th, 2023 – December 13th, 2023
Negotiation & Contracting	December 14th, 2023 - January 22nd, 2024
Project Kickoff	January 23rd, 2024
Go-Live Interfaces	May/June 2024
Go-Live Core	September 2024

Please note: Your reply will be shared under an existing NDA with our consulting partner, Mews Partners, to support us in the review and consolidation of submitted proposals.

3.2. Contacts

Please send any replies to this RfP to the nominated thyssenkrupp nucera representatives:

Name	Sebastian Waldeck	Thomas Gockel	Andrea Ishorst
Function	Head of Product Architecture	Head of Scale Program	Procurement Lead
E-Mail	sebastian.waldeck@thyssenkrupp-nucera.com	thomas.gockel@thyssenkrupp-nucera.com	andrea.ishorst@thyssenkrupp.com

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thyssenkrupp nucera AG & Co. KGaA
Vosskuhle 38, Harpen-Haus
44141 Dortmund

3.3. Expected Content

In this chapter, we present the criteria against which proposals submitted by prospective Service Providers will be evaluated. The evaluation process is designed to ensure a thorough assessment while maintaining clarity and transparency.

3.3.1. Executive Summary

Service Providers should offer a clear and succinct executive summary that highlights the core elements of their proposal, demonstrating alignment with project objectives including maximum of 8 slides with interface approach, global solution concept, pricing overview, project setup, references / company profile.

3.3.2. Technical Solution Concept

Service Providers should provide a detailed description of their technical solution, emphasizing innovative features and approaches, highlighting also 3rd party components if any. Note any 3rd party components/services/products also need to be clearly indicated in the pricing sheet. It is mandatory for all software license terms and conditions to be provided alongside the respective software solutions. This stipulation is applicable to all software, including any potential software that might be furnished directly by the implementation partner. It is crucial for us to ensure that all legal and compliance aspects are thoroughly addressed, maintaining transparency and safeguarding the integrity of our collaborative efforts.

Besides the interface/integration concept the provided solution concept shall also clearly indicate how the variant management shall be established within Siemens Teamcenter outlining the Service Providers competences in configuration & variant management.

3.3.3. Approach for agile way of working

Service Providers should provide an approach based on the described agile principles for the way of working in terms of sprint organization and refinement of requirements.

3.3.4. Client References / Reference customers

Service Providers should present client references with similar challenges, along with details of their solutions and client feedback. Preferable at least one reference customer which can be contacted by Nucera directly shall be named by the Service Provider for each of the relevant components.

3.3.5. Pricing and Cost Structure (inline with overall Project plan and given requirements structure)

Service Providers should provide a detailed breakdown of pricing and cost structures, including any potential additional costs (services, 3rd parties, licenses), ensuring transparency. A detailed pricing template is given as annex to this RfP and all Service

Providers are expected to answer accordingly with structured effort & cost estimations per epic and proposed solution component. The cost estimation should include efforts per profile (experience, nearshore, offshore etc.) please use column C – F in the pricing sheet to list the efforts per offered profile.

Note: While the final scope will be agreed based on the Service Provider's technical solution concept all requirements as per the corresponding annex shall be considered in scope for the effort estimation, as well as sizing of the team etc.

Note: Service Providers shall offer for a fixed price contract and an Agile fixed price model.

3.3.6. Company Profile & Team

Service Providers are expected to present their proposed team to showcase their experience in working with environments comparable to our project's requirements, emphasizing relevant accomplishments especially Teamcenter and necessary interfaces as well as other relevant experiences of team members.

The profile shall indicate relationship with SW Service Providers (Siemens, Microsoft, Aveva, trimble, ...) / additional partners involved (if any) to realize the project scope. In case own IP/products are offered (in technical concept (e.g. IF/middleware)) the related roadmap and support details shall be shared.

Service Providers should provide relevant financial documentation and information that assures their ability to meet project commitments.

3.4. Additional Terms and Conditions

thyssenkrupp nucera in its sole discretion, reserves the right to amend, supplement, terminate, negotiate, or otherwise change this RfP, the process used for evaluation, and/or the expected timeline. Though there is no guarantee for completion of a contract. A right for a contract does not result from this tender.

thyssenkrupp nucera will not assume any liability or obligation regarding the amendment, modification, cancellation, or termination of this RfP.

This RfP is intended to provide enough information for each service provider to complete its proposal. It is the service providers' responsibility to obtain any additional information it deems necessary to complete its proposal subject to the terms of this RfP.

thyssenkrupp nucera makes no representations or warranties regarding the accuracy or completeness of the information contained in this RfP. The service provider is responsible for making its own evaluation of the information and data contained in this RfP, for additional investigation and discussion, and for information obtained directly from thyssenkrupp nucera to prepare and submit its proposal.

Furthermore, the parties are obligated to treat the content and the conclusion of the RfP confidentially and are obligated not to disclose it to a third party without prior approval by the other party and in accordance with the NDA in place.

If one of the RfP parties or a third party, to which business information or confidential information subject to this agreement are handed on by one of the RfP parties, are committed to disclose all or part information by public authorities or courts, the other RfP party will immediately be informed by the respective RfP party so that an injunction

or other adequate protection measures can be effected or so that the fulfilment of the terms can be renounced.

If such an injunction or other protection measures cannot be effected or if the compliance of this basic agreement is not renounced, the RfP party will disclose business secrets and confidential information only insofar as required by legal obligations.

With sending your proposal, you agree with the terms and scope of this RfP.

4. Annex

1. 1A_Annex_Teamcenter current status of development
2. 2A_List of Epic and User Stories
3. 3A_Security Guide
4. 3B_Definitions
5. 3C_Information Security Questionnaire for Suppliers
6. 3D_NCA Supplier Code of Conduct
7. 3E_Agreement with Suppliers S2
8. 3F_Standard_TOM-Katalog
9. 3G_ENG-EXT-Template-Data-processing-Agreement_V3
10. 3H_Individual_Contract_agile_Software_Development_Annex_DOR
11. 3I_Individual_Contract_agile_Software_Development_Annex_DOD
12. 3J_Annex_ETC
13. 3K_Individual_Contract_IT-Services
14. 4A_Pricing Template
15. 4B_Q&A_Template

Glossary

ID	Word	Description
1	Alkaline Water Electrolysis	Process used by thyssenkrupp nucera to produce hydrogen.
2	Alternate Materials	Material or part that is interchangeable in its technical characteristics to another (form, fit and function)
3	API	Application Programming Interface
4	As-Built Configuration	Describes the structure of a serialised assembly that has been produced and the condition or history of its individual components.
5	As-Maintained Configuration	A representation of the actual state of the plant, its components and performed changes at a specific point in time
6	AWE	Alkaline Water Electrolysis
7	Bid & Sales	Process during which pre-sales activities up to contract signature are conducted
8	BOM (E-BOM, M-BOM)	Bill-of-Materials (E: Engineering, M: Manufacturing)
9	BUL	Bestell-Und-Lieferliste, list of parts to be procured and delivered
10	CA	Chlor Alkali
11	Capex	Capital Expenditure
12	CC	Completed Contract
13	Chlor Alkali	Process used by thyssenkrupp nucera to produce chlorine and sodium hydroxide.
14	CoA	Chart of Accounts
15	COLA	Cost of Living Adjustments
16	Completed Contract	Accounting technique that postpones the reporting of income and expenses until after a contract is completed.
17	CRP	Capacity Requirement Planning
18	Customer Order	Actual order (or project) taken from a customer and be delivered on their premises, might include parts to be externally purchased and/or produced plus associated services (eg engineering hours and/or warranty)
19	CW	Calendar Week
20	E2E	End-to-End processes (see §1.3.1 for details)
21	EN	European Norm / European Standard
22	ESEF Reporting	European Single Electronic Format
23	ESG	Environmental, Social and Governance
24	Firesys	Solution for business and sustainability reporting used by thyssenkrupp nucera

25	FX	Foreign Exchange Transactions
26	GAAP	Generally accepted accounting principles
27	GDP	Gross Domestic Product
28	GDPR	General Data Protection Regulation
29	gH2	Green Hydrogen – H2 electrolysis segment of nucera
30	GW	Gigawatt
31	HMI	Human Machine Interface
32	IaaS	Infrastructure as a Service
33	IFRS	International Financial Reporting Standards
34	IPO	Initial Public Offering
35	ISMS	Information Security Management System
36	KKF	„Kostenkontrolle Eigen“
37	LDAP	Lightweight Directory Access Protocol
38	Material Master (MM)	Database comprising all the individual material master records stored in the system. Contains descriptions of all materials that an enterprise procures, produces, and keeps in stock.
39	MES	Manufacturing Execution System
40	Mews Partners	French-German Management consulting company supporting nucera during the Scale NCA program
41	MM	Material Master
42	MRP	Material Requirements Planning
43	MW	Megawatt
44	OOTB	Out of the Box
45	PaaS	Platform as a Service
46	Percentage-of-Completion (PoC)	Accounting technique that recognises revenues, expenses, and taxes during the period that a contract is being executed depending on predefined milestones to be reached.
47	PLM	Product Life-Cycle Management
48	PMO	Project Management Office
49	PO	Purchase Order
50	PoC	Percentage-of-Completion
51	PP&E	Property, Plant, and Equipment
52	PR	Purchase Request

53	Prefabrication- Premodularisation-of- Fabrication	Way of splitting the operational production process into smaller steps
54	PREQ	Purchase Requisition
55	Procure-to-Pay	Financial processes from ordering a product until payment
56	Provider	Recipients of this RfP and thus possible integrators of the future ERP
57	QA/QC	Quality Assurance / Quality Control
58	QHSE	Quality, Health, Safety, Environment
59	Revamp	Specific project aiming at extensively renovating an existing plant and make it more modern and efficient
60	SaaS	Software as a Service
61	SAP RE-FX	Module name for SAP Flexible Real Estate Management
62	SCALUM	20 MW Standard gH2 Product module
63	Scale NCA	Transformation project of thyssenkrupp nucera
64	SG&A	Selling, General, and Administrative
65	Stick Build	Construction method in which a plant is constructed and built entirely on site.
66	TK Group	thyssenkrupp group
67	tkIS	thyssenkrupp Industrial Solutions AG (Management company of the respective business area of thyssenkrupp AG)
68	UC	Use Case
69	UCE	Uhde Chlorine Engineers (former name of thyssenkrupp nucera)
70	Uhde	Globally active engineering company in the field of planning and construction of chemicals, refinery, and other industrial plants within the ThyssenKrupp Group (integrated in ThyssenKrupp Industrial Solutions AG).
71	VAT	Value Added Tax