



# Smart data and document delivery

Designed by the industry,  
for the industry



Digitalisation provides further opportunities to reduce exploration costs, mitigate risks and enhance work-process efficiency.

# Introduction

Digitalisation represents the new milestone which the Norwegian oil and gas industry is heading for. It provides a wide range of opportunities for reducing exploration costs, mitigating risks, and enhancing work-process efficiency and documentation management during all stages of energy production.

Changing the approach to information and data transfer will help to achieve the strategy of simplifying and streamlining the costly and time-consuming delivery of equipment information across the entire oil and gas industry on the Norwegian continental shelf (NCS).

EqHub is the door opener for improved competitiveness and value creation, and establishes a new level of cooperation across the NCS.



# Why make the change?

The key players on the NCS have stated publicly that document management needs to be supported by better processes, standards, and solutions.

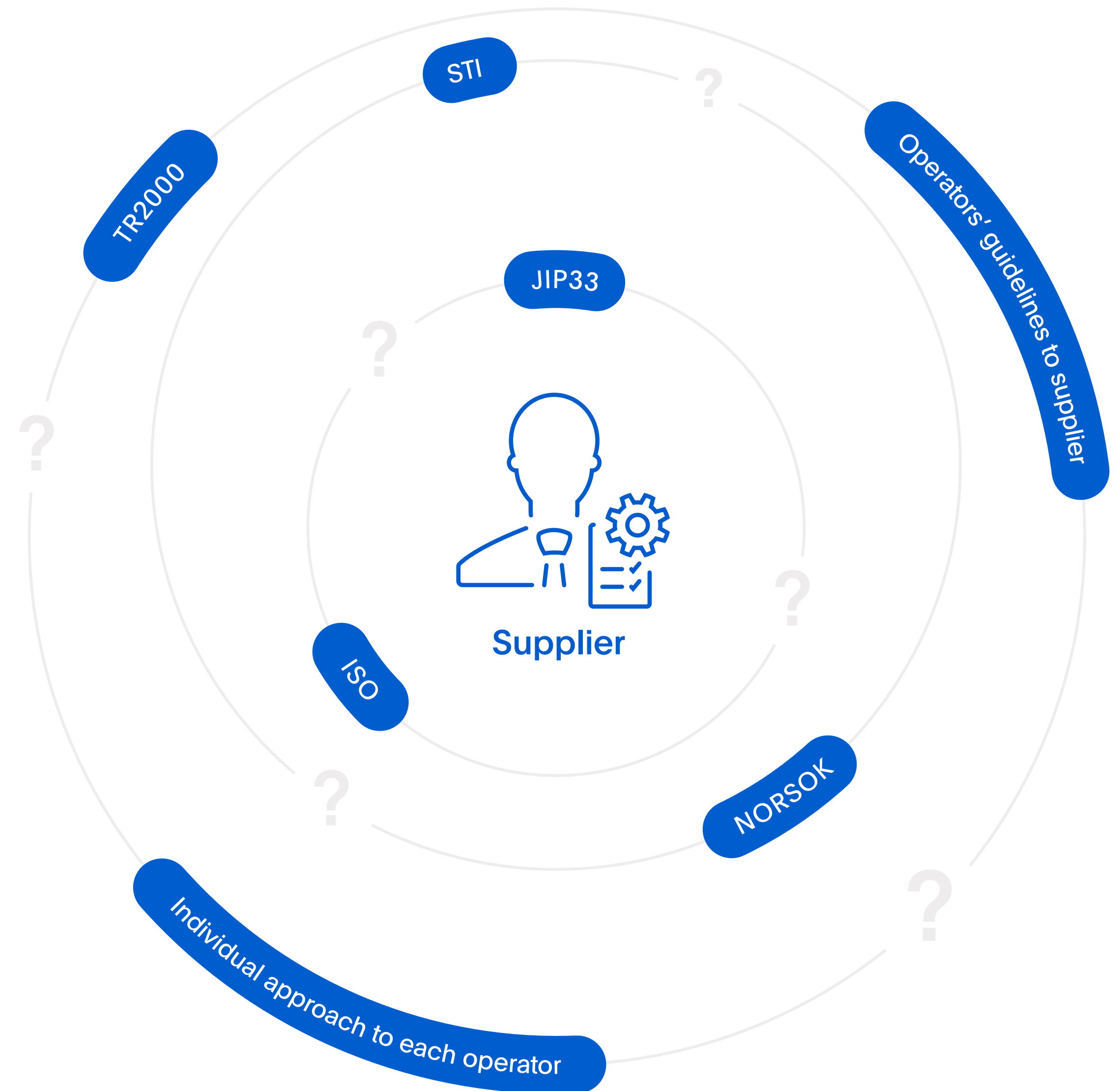
Costs in this area could be halved if the energy sector invests in innovative improvements.



# Why make the change?

When entering the market, suppliers need to address the following challenges:

- an ever-growing number of requirements and standards
- a strong regulatory environment
- switching between multiple tools when collaborating across the NCS.



# Data-driven supply chain challenges

Identifying the primary data-quality challenges facing the oil and gas industry today, and taking further action on them, correlates directly with the way EqHub can improve performance in the supply chain ecosystem.

## Data quality



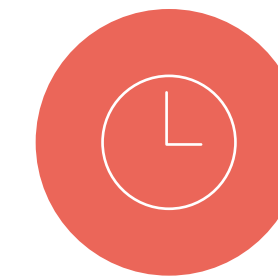
### **Lack of visibility affects agility and decision-making**

Incomplete, outdated and fragmented data across dozens or even hundreds of systems



### **Poor data quality costs millions**

Ineffective operations and logistics, missing procurement information.



### **Manual processes result in slow time to market**

Redundant workloads and significantly slowed time to market (the operator)



### **Failure to comply with regulatory demands**

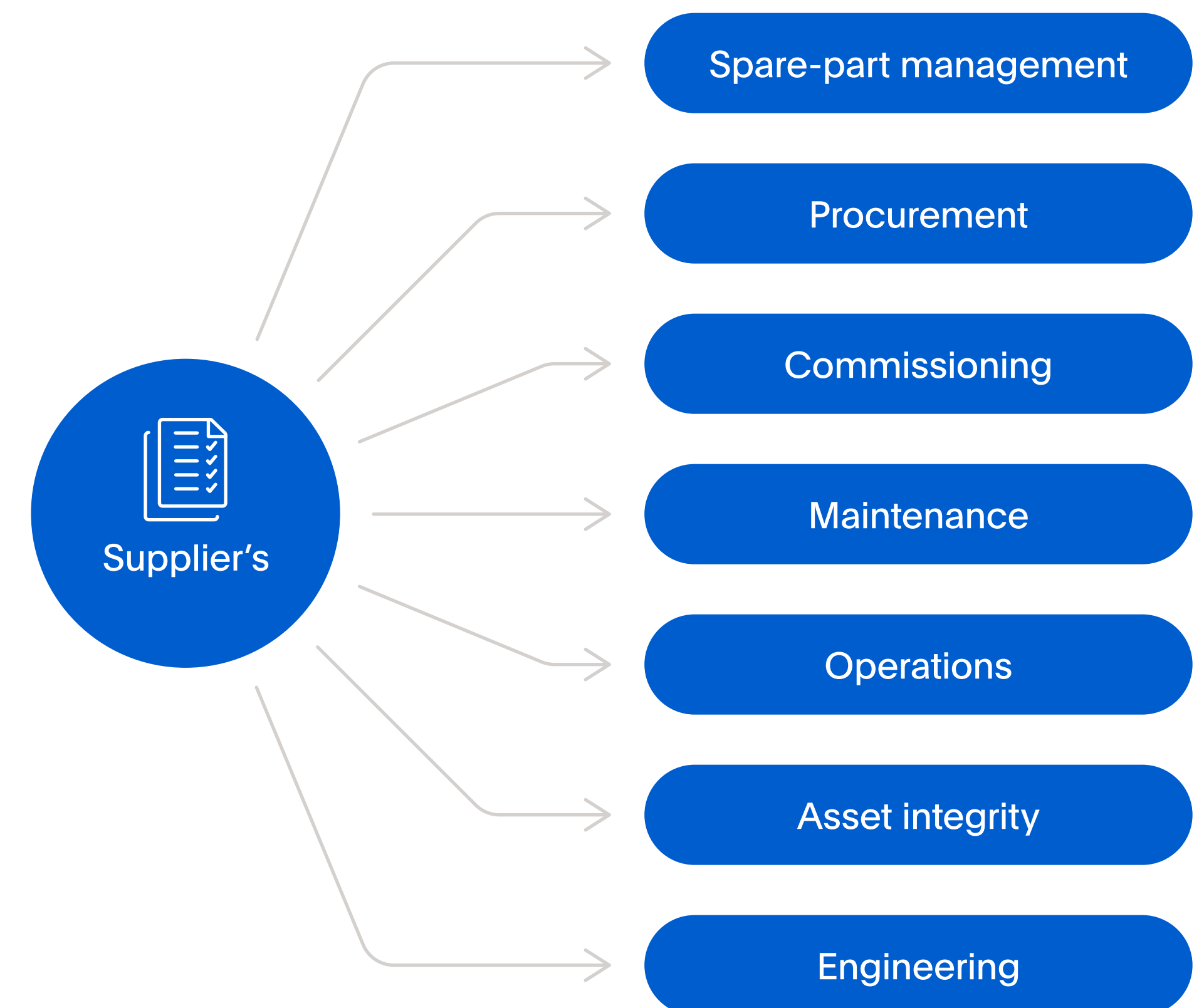
Non-compliance with the established regulations

# Supplier data

Supplier data are crucial for supporting multiple business functions at owner-operators, contractors and suppliers. However, each department specifies different requirements for document setups, which are challenging to follow and may result in the creation of multiple data silos.

## What if the data are incomplete?

The oil and gas industry is on its way to finding the right approach to documentation management. Where equipment suppliers are concerned, every mistake in document delivery and data processing may cost double that of deliveries to other industries.

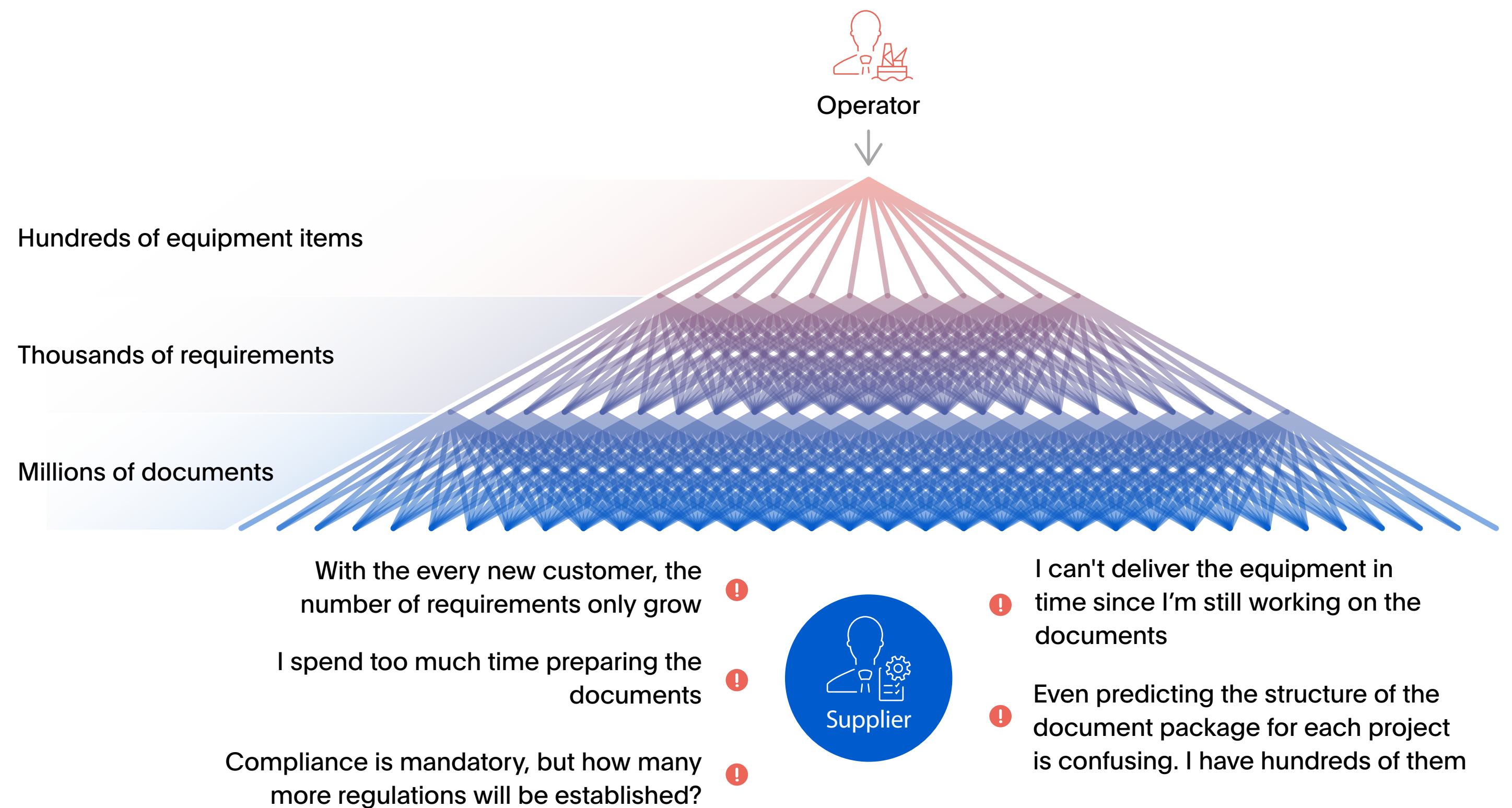




# Current supplier's lifecycle

Suppliers deliver the same equipment to different operators, which may be installed several times in each project. For each delivery, the supplier creates a standard document package in accordance with the specific requirements set by the operator.

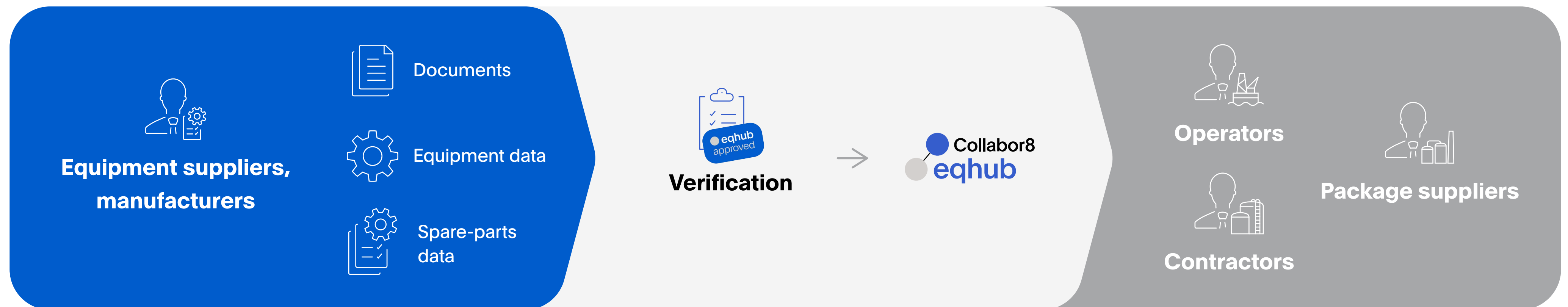
This document management approach only complicates selection and delivery processes, resulting in many rounds of document reviews before final approval of the information delivered.



# Sustainable future for document sharing

The basic principle of EqHub is to enter the equipment information in the system only ONCE, and then REUSE it as many times as needed. EqHub assigns a unique TEK number to each item entered into the system. Furthermore, this TEK number is linked to the correct TAG number, which identifies what equipment was delivered to the operator company and how it can be substituted.

EqHub serves as a single and controlled source of vendor documentation for all the parties involved.



The data entry stage is based on the requirements previously specified by operators

Verification stage, compliance check.  
Making data available to all the parties involved

Usage and delivery stage: correct equipment information is connected to the PO/TAG

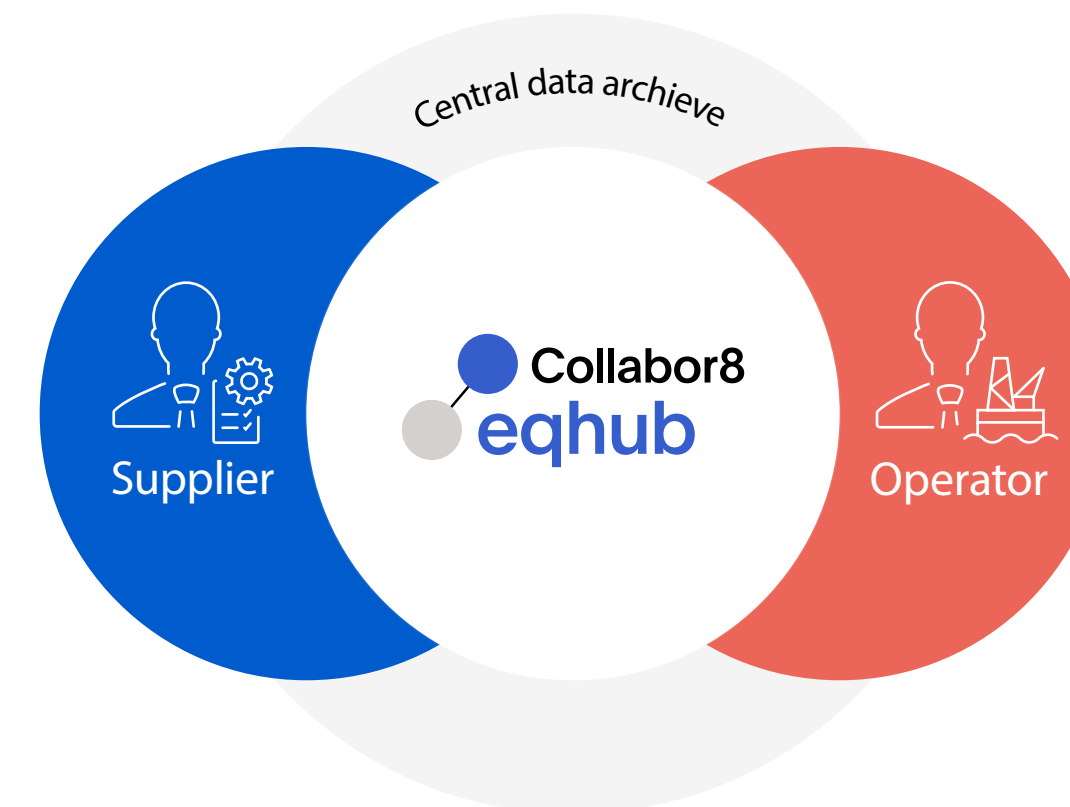


# Data exchange in EqHub

With EqHub, suppliers provide information **ONLY ONCE**. This significantly reduces their delivery work per project and gives them a competitive edge owing to lower documentation costs. Contractors will eliminate work on information expediting, compilation and timely delivery.

Communication and collaboration will be simplified since only one central data archive will be available and accessible at any time.

- ✓ Personal catalogue with stored documents and drawings. At any time, data can be extracted and changes traced with the TEK number
- ✓ Requirements are clearly specified for each equipment item
- ✓ Information is verified and data are complete
- ✓ Increased number of completed orders and shorter delivery time
- ✓ Compliance with the latest standards/regulations
- ✓ The operator can consider you a trusted supplier

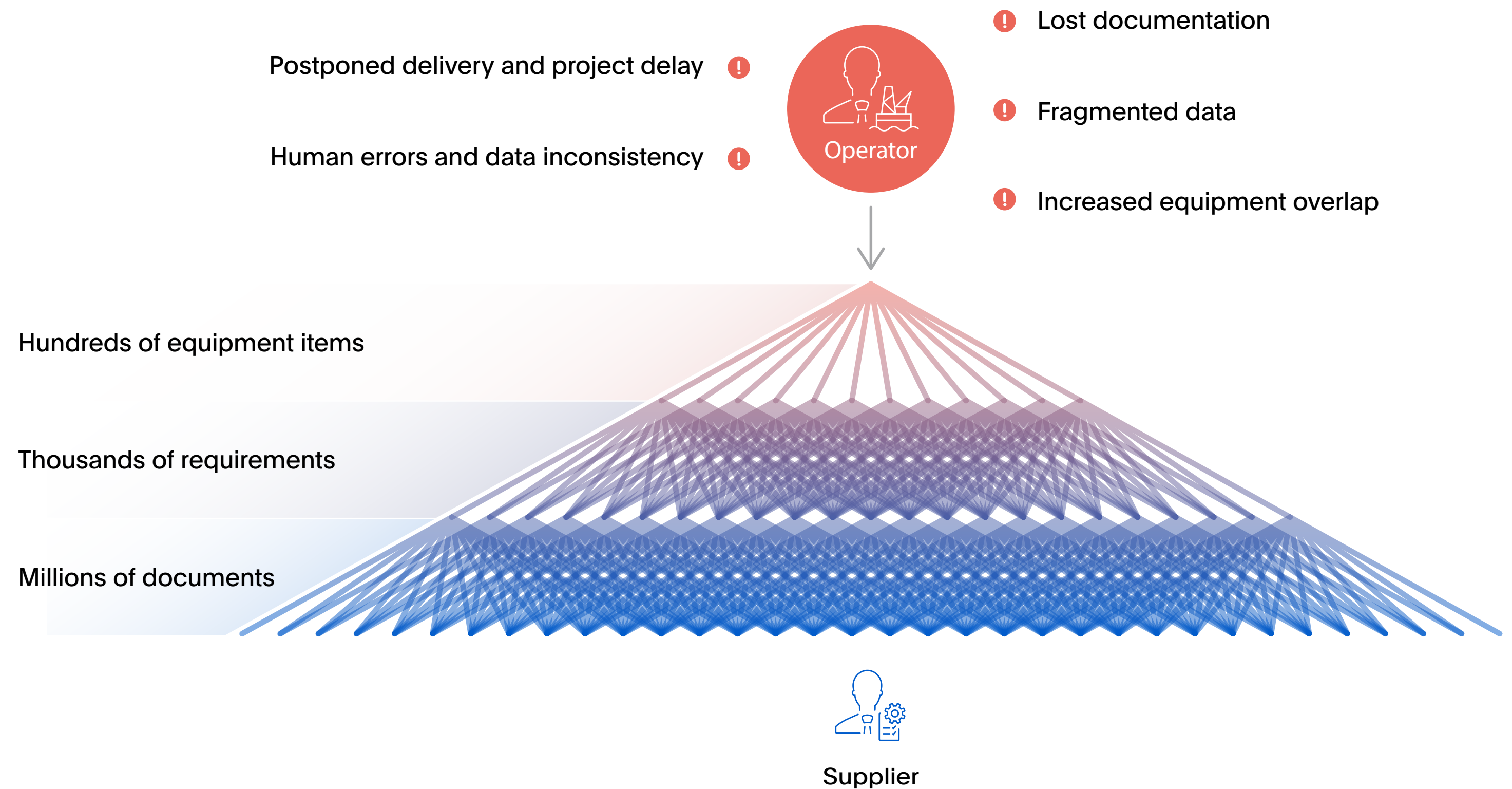


- ✓ Planning material requirements
- ✓ Purchasing
- ✓ Inventory control
- ✓ Quality control
- ✓ Material supply management

# Operator challenges

Collaboration between the players offers a great potential for improving information visibility. In addition to providing technology-based improvements, organisations must ensure that end-to-end inventory management is integrated through a consistent process framework.

Utilising and implementing EqHub as a single-source solution for data delivery will support the digitalisation of the oil and gas industry through data sharing and reusing documents and data in a collaborative environment.



# Define the stage

EqHub ensures the implementation of common requirements and standards related to equipment and data deliveries during the following project development stages.



Building a new platform from scratch requires data document gathering and alignment of the delivery process. The data are consolidated in EqHub and visible to every party involved. All processes correctly established during this stage will simplify the following stages significantly.

Material codification, warehousing and logistics processes are supported through data deliveries. An accurate inventory register means the number of items in stock is displayed.

The project data are complete and comprehensive, with an instant understanding of what is installed and what can be reused.

× Pre-award

× Exploration

✓ Development

✓ Operations

✓ Decomissioning

Companies entering documentation are responsible for the data quality and have the intellectual property rights to the information. The supplier is also responsible for keeping the information correct and current.

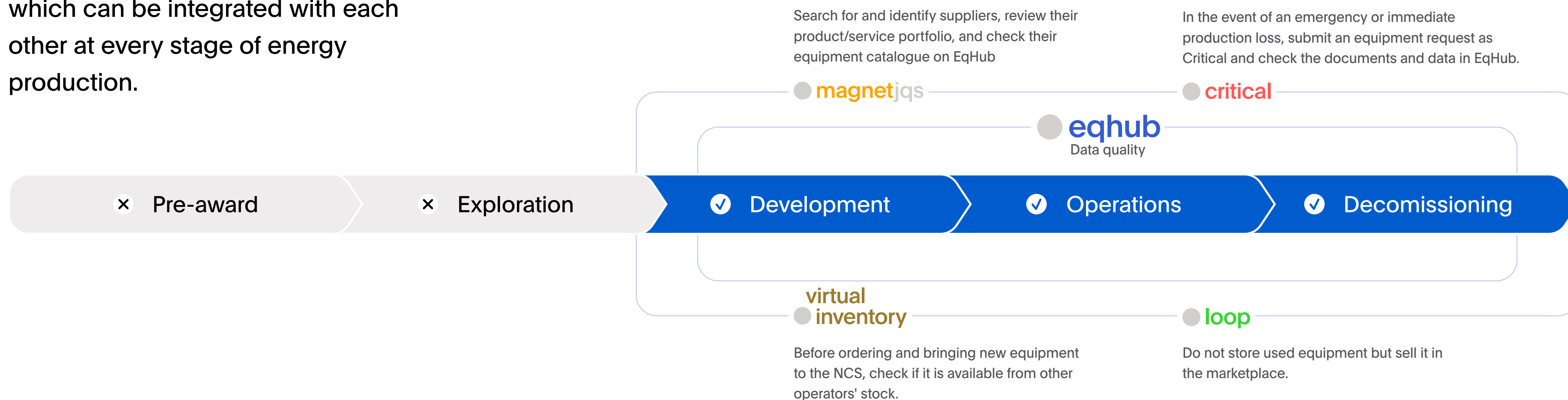
Simplified standard documentation deliveries have shown that, above all, maintainable tags can be documented through simplified processes using EqHub. Replacing or reordering processes are facilitated through the opportunity to access data quickly and trace the changes applicable to a particular TEK number.

EqHub permits combining or linking products, and establishing spare-part lists or separate units with several standard components. It also provides opportunities to document more extensive components, such as subsea units and other package items.



# Innovative Norwegian Oil and Gas material management approach

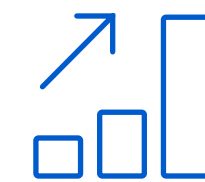
Zero-waste production and data utilisation. Norwegian Oil and Gas has established all-encompassing material management solutions which can be integrated with each other at every stage of energy production.





# Reaching milestones with EqHub

Digitalisation and formulation of the single documentation and data source will result in:



**improved**  
work  
efficiency



**optimised**  
inventories



**shortened**  
data delivery  
schedules



**reduced**  
documentation  
volumes



**achieved**  
regulatory  
compliance



**mitigated**  
risks



**saved**  
time and  
resources



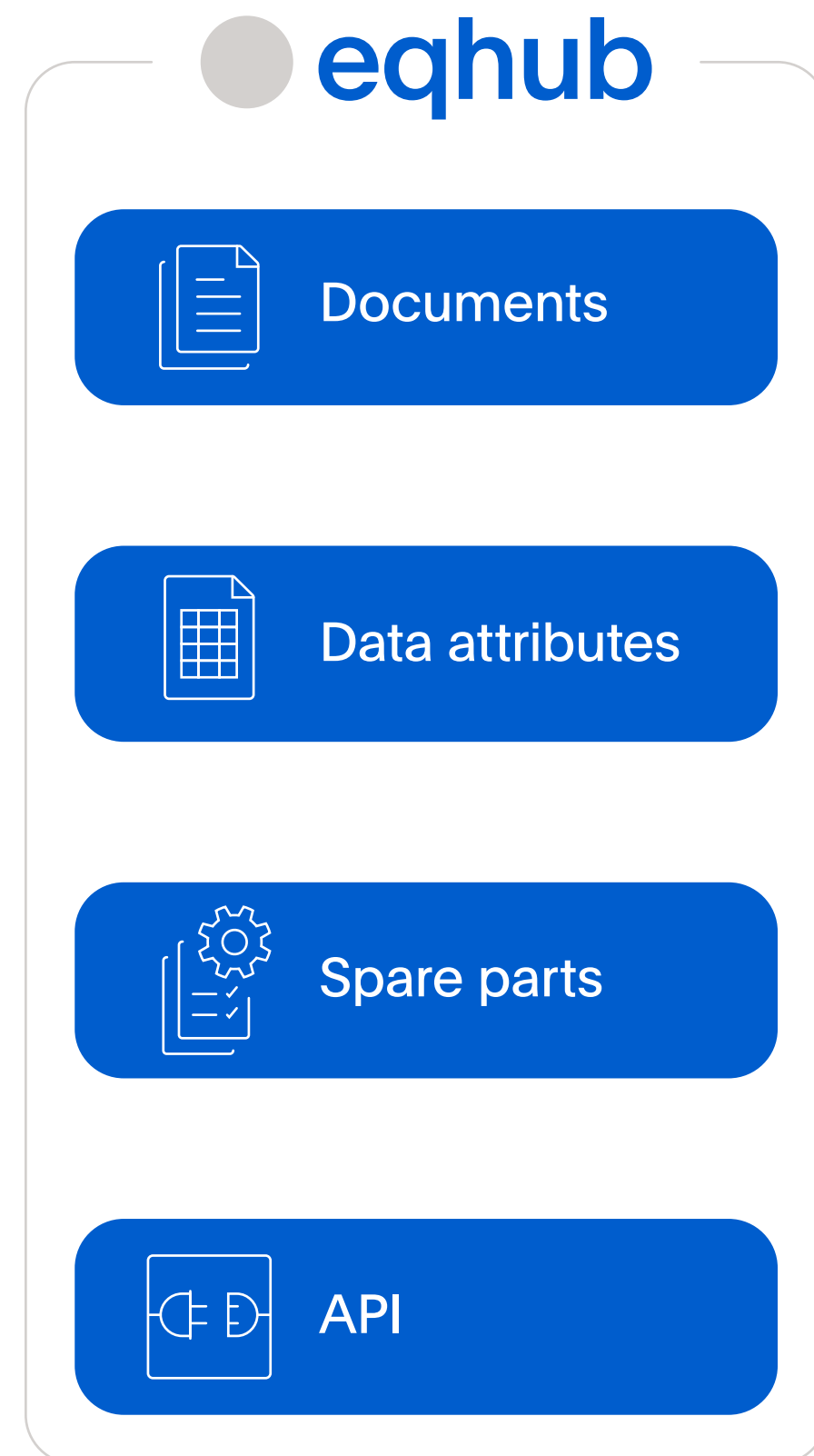
**avoided**  
non-produced  
assets

The text "Product overview" is displayed in a large, bold, black sans-serif font. To the left of the word "Product" is a light blue circle. Below the text is a large blue rounded rectangle, and to its right is a grey circle.

# Product overview



# What is EqHub



Standardised, reusable documents based on industry standards

Data attributes based on industry standards

Data attributes based on industry standards

Integration and data-sharing platform

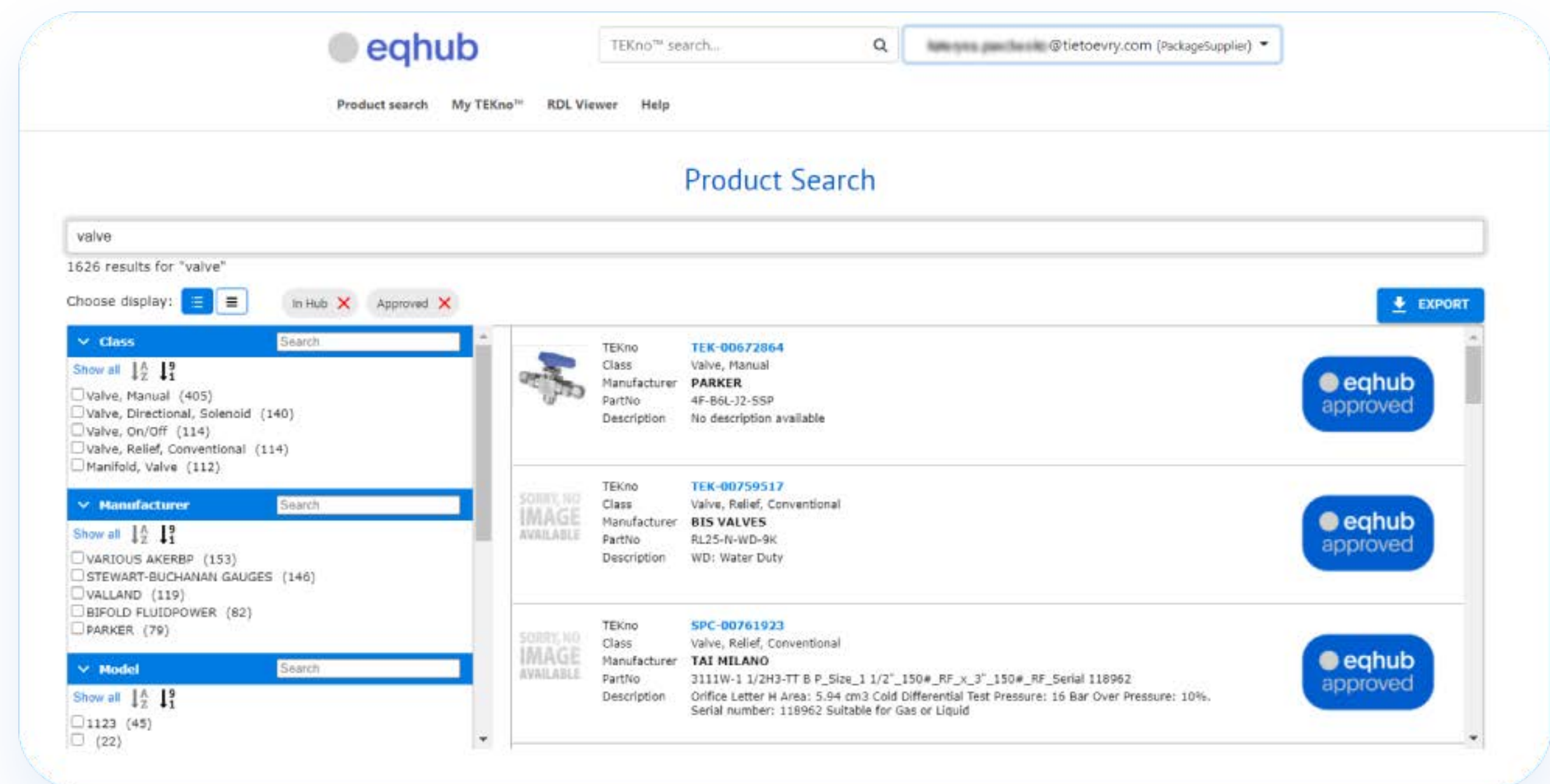
EqHub is a cloud solution for managing standard data and documentation across all operators on the NCS. The solution gives access to pre-qualified, classified and quality-assured information when needed, and provides a technical information library for standard equipment in accordance with ISO 15926.

The critical components of EqHub are:

- a repository solution for standard documents and metadata related to documents, in addition to equipment data and values
- a data standard with product structures, classes and attributes aligned with relevant industry standards
- functionalities for structuring and linking parts and spares.

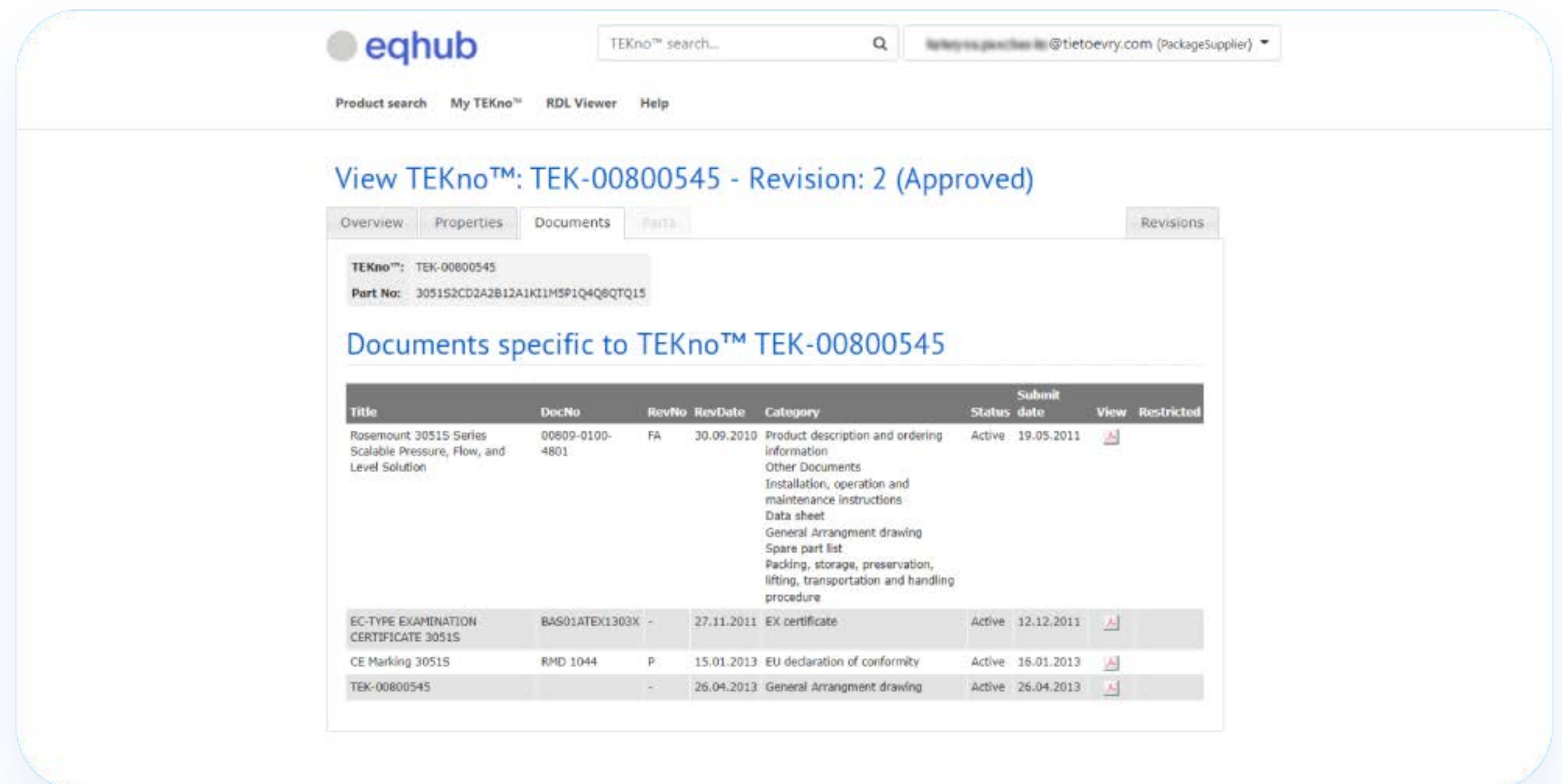
# EqHub functionality

The solution provides general information about the equipment: who has added data to EqHub and whether the information entered is verified. EqHub has advanced search functionality to look for information through Elasticsearch and to navigate through component types down to equipment, attributes and all the way to attribute level.



# EqHub document management

The document management feature allows manufacturers to upload documents as document files and attach relevant metadata to registered documents. The document categories are based on standards and aligned with the STI project. Document access can be editable or read-only.



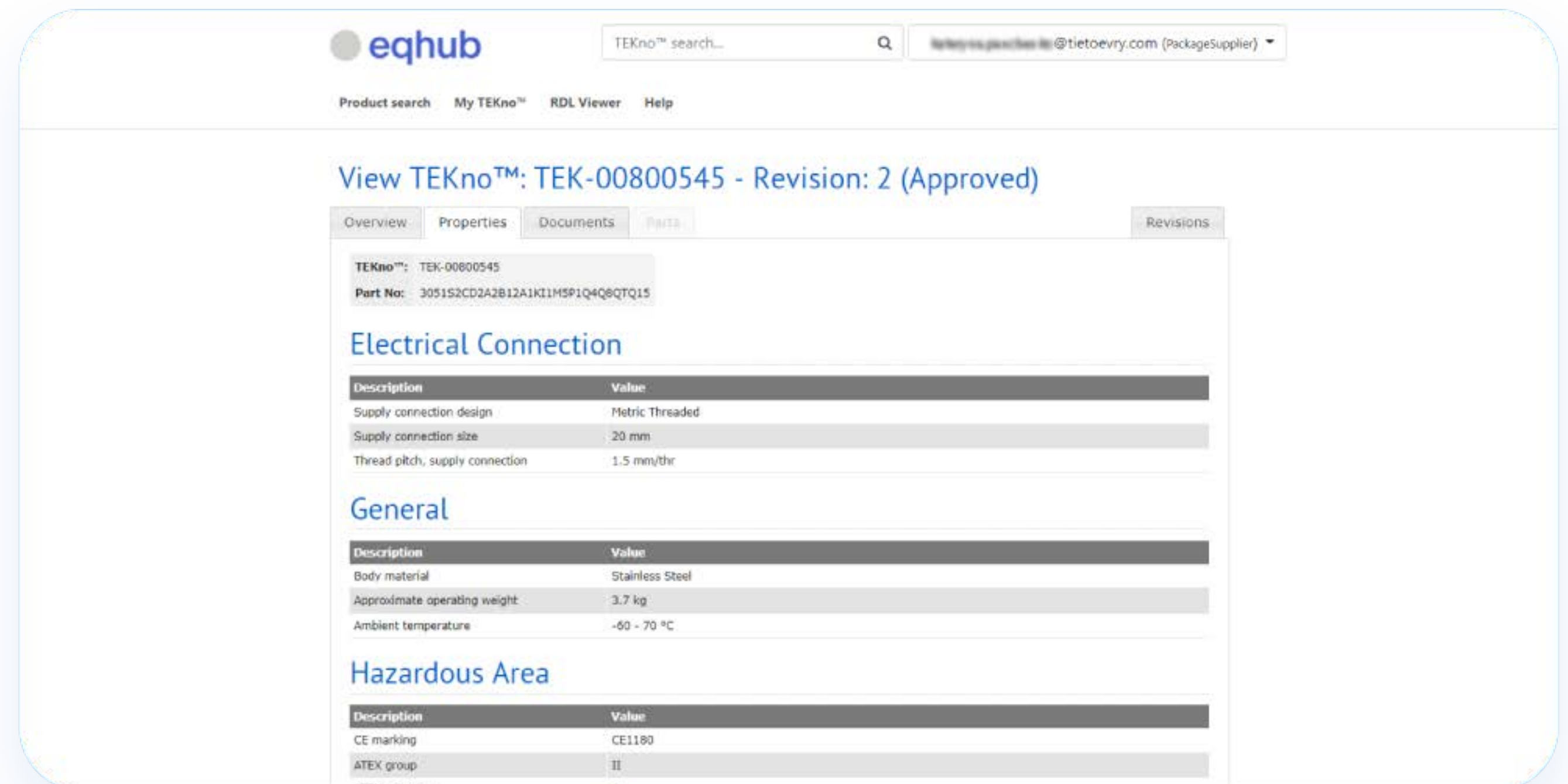
The screenshot displays the EqHub web interface for viewing document details. The top navigation bar includes the EqHub logo, a search bar, and a user profile dropdown. The main content area shows the document title "View TEKno™: TEK-00800545 - Revision: 2 (Approved)" and a tabbed interface with "Overview", "Properties", "Documents", and "Revisions". The "Documents" tab is active, showing a table of documents specific to TEK-00800545.

Title	DocNo	RevNo	RevDate	Category	Status	Submit date	View	Restricted
Rosemount 3051S Series Scalable Pressure, Flow, and Level Solution	00809-0100-4801	FA	30.09.2010	Product description and ordering information Other Documents Installation, operation and maintenance instructions Data sheet General Arrangement drawing Spare part list Packing, storage, preservation, lifting, transportation and handling procedure	Active	19.05.2011		
EC-TYPE EXAMINATION CERTIFICATE 3051S	BAS01ATEX1303X	-	27.11.2011	EX certificate	Active	12.12.2011		
CE Marking 3051S	RMD 1044	P	15.01.2013	EU declaration of conformity	Active	16.01.2013		
TEK-00800545		-	26.04.2013	General Arrangement drawing	Active	26.04.2013		



# EqHub data management

It is possible to add information on a class, attribute and value level for users with the access to make such additions. Other users can read the information in the solution.



The screenshot shows the EqHub web application interface. At the top, there is a search bar labeled 'TEKno™ search...' and a user profile dropdown for 'tietoevry.com (PackageSupplier)'. Below the header, navigation links include 'Product search', 'My TEKno™', 'RDL Viewer', and 'Help'.

The main content area displays the title 'View TEKno™: TEK-00800545 - Revision: 2 (Approved)'. Below this, there are tabs for 'Overview', 'Properties', 'Documents', 'PARTS', and 'Revisions'. The 'Overview' tab is active, showing the following information:

- TEKno™: TEK-00800545
- Part No: 3051S2CD2A2B12A1KI1M5P1Q4Q8QTQ15

The page is divided into three main sections, each with a table of attributes:

### Electrical Connection

Description	Value
Supply connection design	Metric Threaded
Supply connection size	20 mm
Thread pitch, supply connection	1.5 mm/thr

### General

Description	Value
Body material	Stainless Steel
Approximate operating weight	3.7 kg
Ambient temperature	-60 - 70 °C

### Hazardous Area

Description	Value
CE marking	CE1180
ATEX group	II
ATEX category	1

# Spare-part handling: combine or link products

EqHub enables users to combine or link products and thereby create spare-part lists or units consisting of several standard components. This approach can be relevant for delivery purposes.

The solution also permits documenting more extensive components, such as subsea units and other package units.

It is possible to add information at a class, attribute and value level for users with the access to make such additions. Other users can read the information in the solution.

The screenshot displays the EqHub web application interface. At the top, there is a search bar labeled 'TEKno™ search...' and a user profile dropdown for 'tietoevry.com (PackageSupplier)'. Below the search bar, navigation links for 'Product search', 'My TEKno™', 'RDL Viewer', and 'Help' are visible. The main content area shows the title 'View TEKno™: TEK-00826563 - Revision: 2 (Approved)'. Below this, there are tabs for 'Overview', 'Properties', 'Documents', 'Parts', and 'Revisions'. The 'Parts' tab is active, displaying a table titled 'Manage parts'. The table has columns for Name, TEKno, Unit, Material, Manufacturer, Part number, Quantity, and Sp. The table lists several components, including 'Main electronic module for Micr...', 'I/O module Level 2-wire 4-20m...', 'Terminal set 2-wire, I/O module...', 'Kit display module, SD02, push...', 'Housing filter 304, GT16', 'Set housing securing clamps', 'Cover GT16 316L, sight glass...', 'Cover GT16, terminal Ex, gasket', 'Sealing set housing GT16/GT1...', and 'Main electronic module for Micr...'. Each row provides details for these components, such as the manufacturer 'Endress + Hauser' and the part number.

Name	TEKno	Unit	Material	Manufacturer	Part number	Quantity	Spa
FAIRDR spare parts							
Main electronic module for Micr...				Endress + Hauser	XPF0020L2+AAALA		
I/O module Level 2-wire 4-20m...				Endress + Hauser	71187812		
Terminal set 2-wire, I/O module...				Endress + Hauser	71110280		
Kit display module, SD02, push...				Endress + Hauser	71109958		
Housing filter 304, GT16				Endress + Hauser	71115174		
Set housing securing clamps				Endress + Hauser	71115176		
Cover GT16 316L, sight glass, ...				Endress + Hauser	71110282		
Cover GT16, terminal Ex, gasket				Endress + Hauser	71110291		
Sealing set housing GT16/GT1...				Endress + Hauser	71110303		
Main electronic module for Micr...				Endress + Hauser	XPF0020L2+AA		

# EqHub API

With an open API, data can be gathered from EqHub for several purposes during the design and engineering phase.

Based on the design, data from EqHub can be linked to data models through data attributes.

EqHub enables users to choose and document equipment and parts before the project starts.

Teknos Methods related to Teknos		
GET	/Catalogues/{catalogueId}/Teknos	Returns list of TEK numbers for a specific catalogue using optional parameters
POST	/Catalogues/{catalogueId}/Teknos	Creates a TekNo and a HubTekNoHref
POST	/Catalogues	
GET	/Catalogues	
PATCH	/Catalogues	
POST	/catalogues	
DELETE	/catalogue	

Catalogues Methods related to Catalogues		
GET	/Catalogues	Returns list of catalogues available for the authenticated user
GET	/Catalogues/{id}	Returns details for a specific catalogue

Classes Methods related to Classes		
GET	/Catalogues/{catalogueId}/Classes	Returns list of classes from the RDL of a specific catalogue
GET	/Catalogues/{catalogueId}/Classes/{classId}	Returns detailed class definition for a specific class

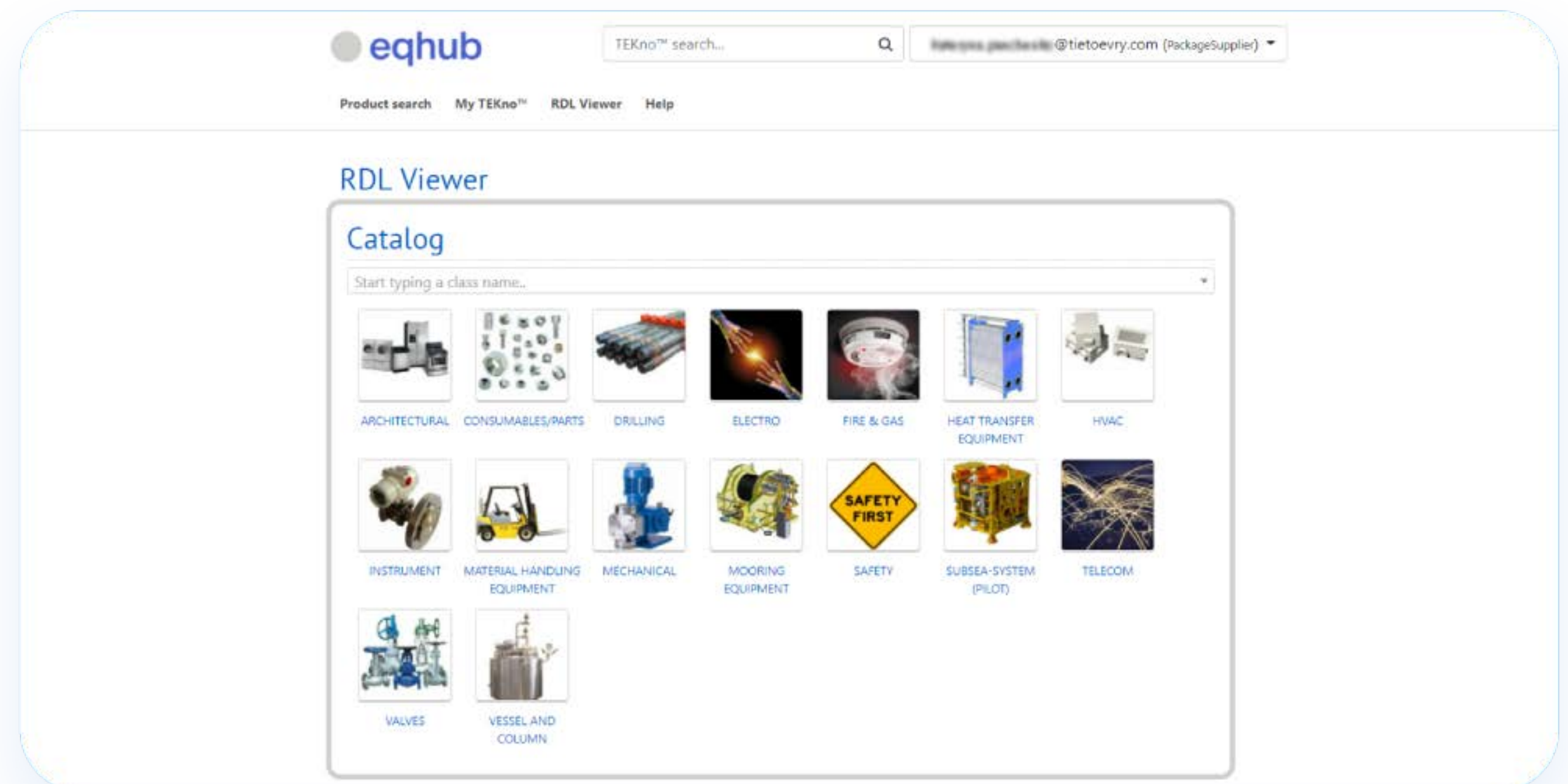
  

Companies Methods related to Companies		
GET	/Catalogues/{catalogueId}/Companies	Returns list of companies from the RDL of a specific catalogue



# Equipment class library

This contains a dedicated RDL catalogue which displays the equipment class library. Each item card provides the equipment supplier with a basic understanding of which documents and properties should be entered in the system.



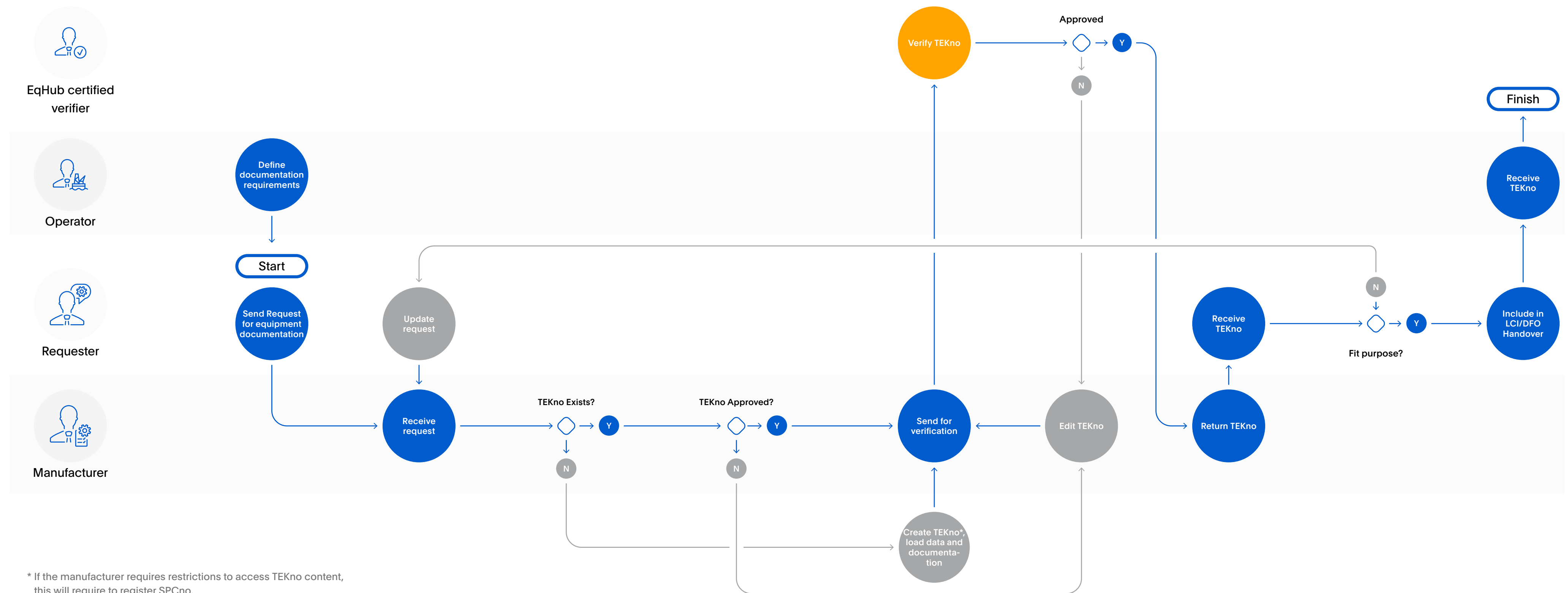
# EqHub TEK number

The TEK number in EqHub is a unique combination of the manufacturer and manufacturer's part number. It can be reused by any operator, contractor, or supplier for any project/asset.

The TEK number is valid when it has been quality controlled and approved.

The screenshot displays the EqHub web application interface for TEKno™ Management. At the top, the EqHub logo is on the left, and a search bar with the placeholder 'TEKno™ search...' and a magnifying glass icon is on the right. Below the search bar is a navigation menu with links: 'Product search', 'TEKno™', 'My TEKno™', 'Documents', 'Verification list', 'RDL Viewer', and 'Help'. The main heading 'TEKno™ Management' is centered. Below this, there is a form with three input fields: 'Manufacturer:' (a dropdown menu), 'Model:' (a text box), and 'PartNo:' (a text box). Each field has an information icon (i) to its left. Below the input fields are two checkboxes: 'Only TEKno™'s in hub' (checked) and 'TEKno™'s activated by me.' (unchecked). Each checkbox has an information icon (i) to its right. A blue 'Search' button is positioned below the checkboxes. In the bottom right corner of the form, there is a blue button labeled 'Create new TEKno™'.

# Register and verify information in EqHub







 **EqHub:**  
**be data-smart**

Contact us

