



16. CADENAS Industry Forum 2015

**Introduction of the strategic parts management
PARTsolutions from CADENAS at AMAZONE**

Pascal Giron / Christian Vennemann, Amazonen-Werke H. Dreyer GmbH & Co. KG



The AMAZONE Group

Motivation for the introduction of PARTsolutions

Initial basis: ERP and part search

Our requirements and goals

PLM landscape and distributed product development at several locations

Teamcenter UA Server Network

Figures and Facts

Project history

Current status

Part categories at AMAZONE

Parts management with CADENAS PARTsolutions – Folder structure

Parts management with CADENAS eCATALOGsolutions – Company standard parts

Geometric similarity search with CADENAS GEOsearch

Vision

The AMAZONE Group



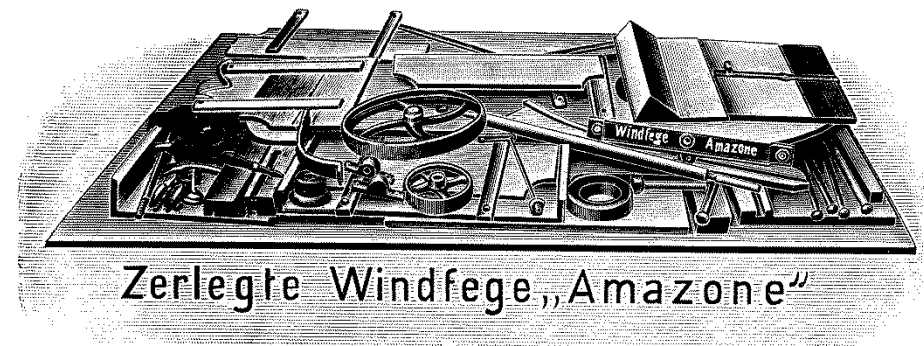
The beginning

1883 Heinrich Dreyer founded the **AMAZONEN-WERKE**.

In **1906** already he delivered the first grain cleaning machines to Chile.

The motto of Heinrich Dreyer

“We have to go out into the world.”



The beginning: The generational contract

The founder **Heinrich Dreyer** determined:
Direction of the company by two of his
fice children as managing directors
and shareholders

The following owner families each
provide one managing director

Objectives:

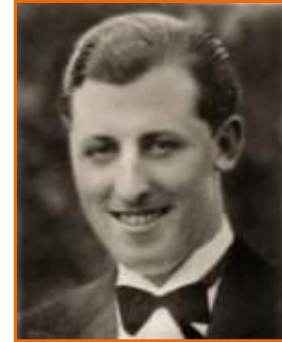
→A clear shareholder and
management structure

→The future of the company
in the focus

→A division of shares among too
many shareholders is avoided

2nd Generation

Left Heinrich Dreyer
Right Erich Dreyer



3rd Generation

Left
Prof. h.c. (SAA Samara) RAAS
Dr. Dr. h.c. Heinz Dreyer
Right
Klaus Dreyer



4th Generation

Left Dr. Justus Dreyer
Right Christian Dreyer

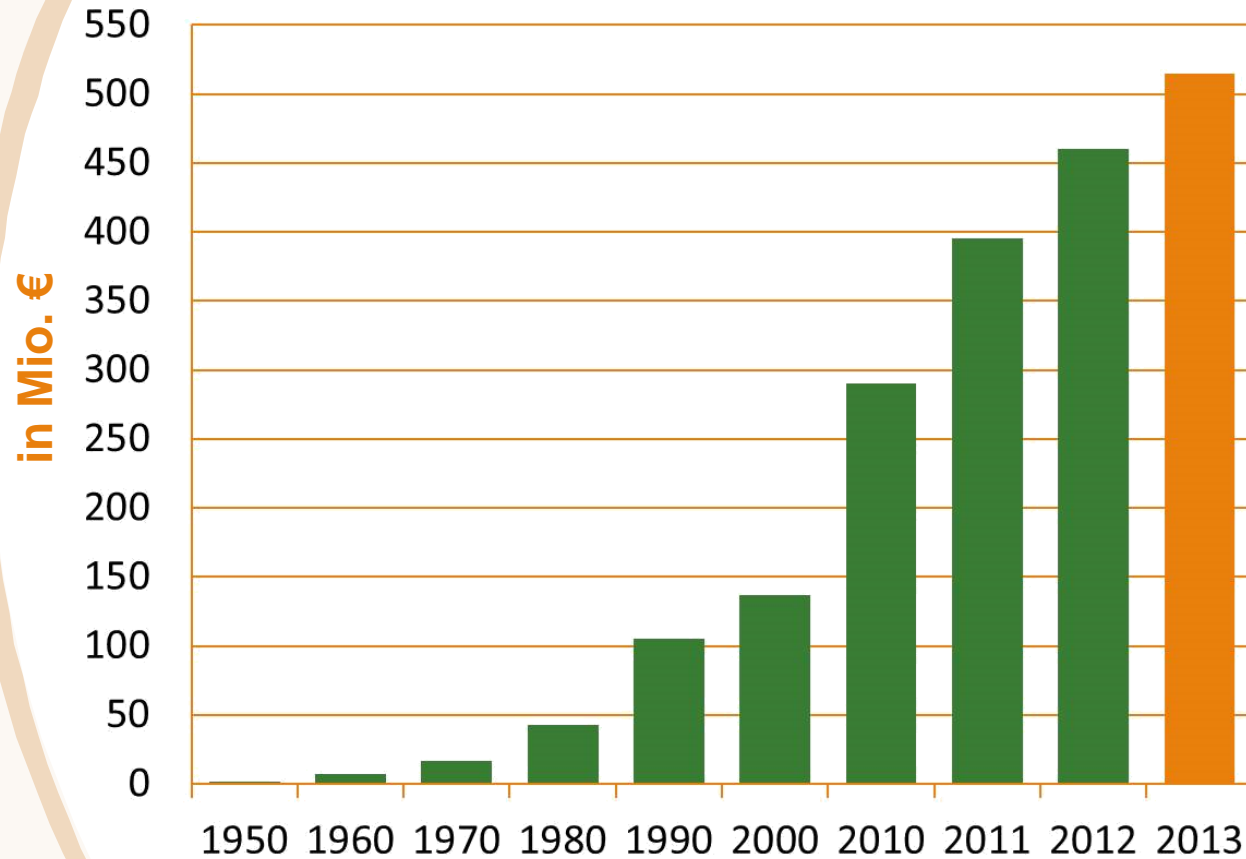
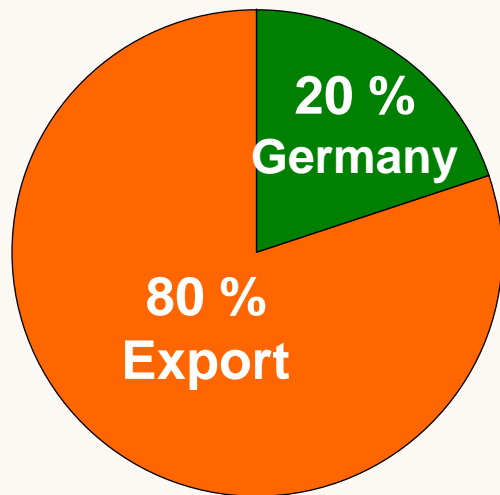


Turnover development until today

In 2013 the **AMAZONE** Group again has generated a record turnover of **515 Mio.** Euro.

Increased activities in foreign countries and overseas result in the high export share of **80 %**.

AMAZONE is well equipped for the challenges of the future!





Bodenbearbeitung



Saat



Düngung



Pflanzenschutz



Processing technology with system

Intelligent crop production

Our strategic positioning



The AMAZONE Group

Hasbergen-Gaste – Leeden – Hude – Altmoorhausen
Leipzig – Forbach (F) – Samara (RUS)

Sales companies and importers

Six sales companies

AMAZONE S.A.
(Auneau, France)

AMAZONE Ltd.
(Harworth, Great Britain)

AMAZONE OOO
(Podolsk, Russia)

AMAZONE Ukraina
(Kiev, Ukraine)

AMAZONE Kft
(Debrecen, Hungary)

AMAZONE Kazakhstan
(Astana, Kazakhstan)

More than 70 importers worldwide





1,800 employees worldwide

135 trainees at the different sites

The AMAZONE Group

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- Figures and Facts

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- Parts categories at AMAZONE

- Parts management with CADENAS PARTsolutions – Folder structure

- Parts management with CADENAS eCATALOGsolutions – Company standard parts

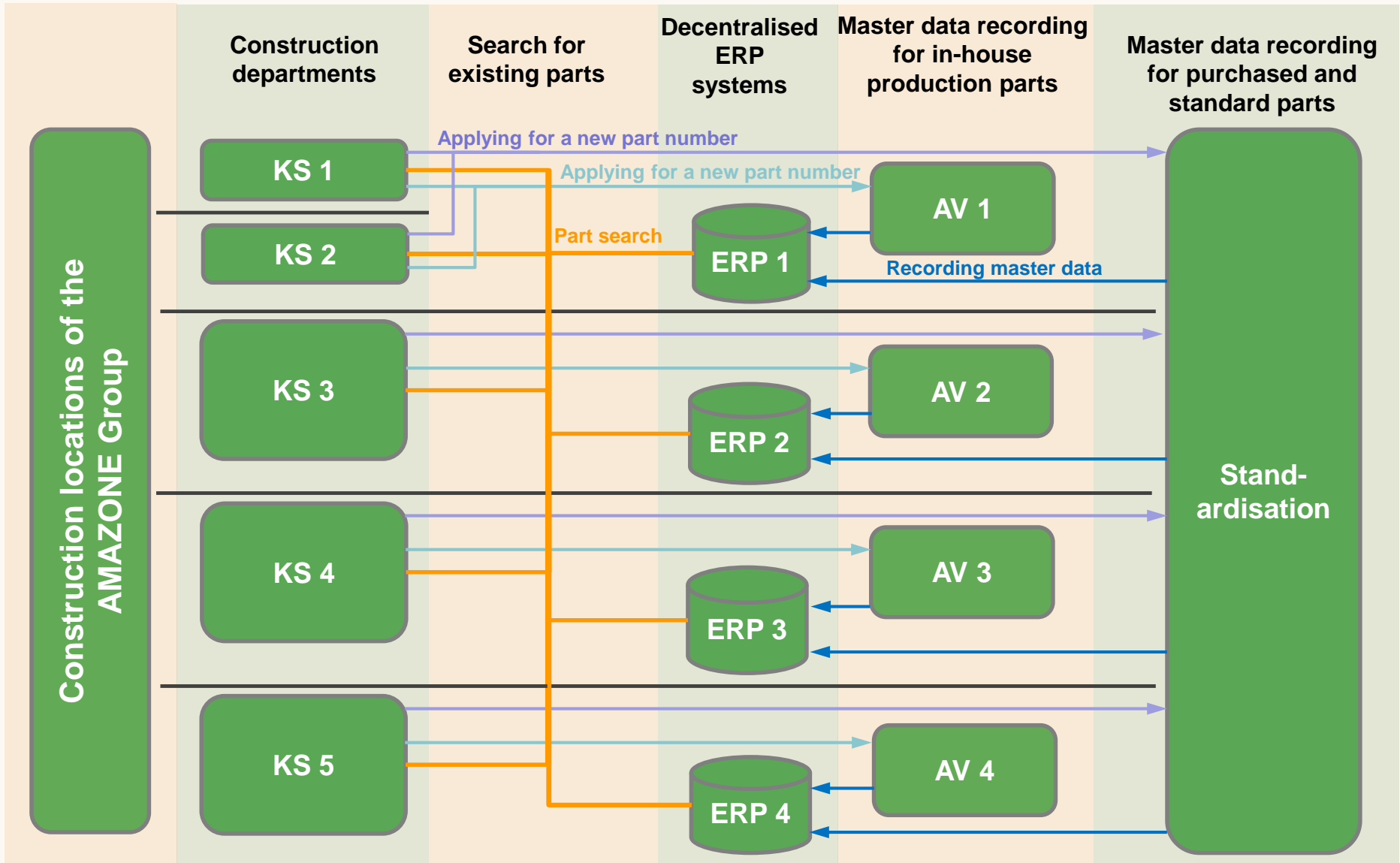
- Similarity search with CADENAS GEOsearch

Vision geometric

Initial basis: ERP and part search

- Construction departments at several locations
- SageBäurer decentralised at every location – leading master data system (defined designations)
- Search for existing parts only possible via metadata.
- Finding of existing parts requires uniform designation of all parts
- The recording of master data for in-house production parts is decentralised from the work preparations at every location
- The parts classification for purchased parts is performed centrally cross-plant for all locations by the standardisation department

Initial basis: ERP and part search



Our requirements and goals

- Better finding of existing parts, identification of preferred parts
- Improve the quality of the master data (complete specifications on weights, dimensions, manufacturer item numbers of purchased parts, etc.)
- Make standard parts and company standards more accessible
- Easy access to information on purchased parts
- Catalogue parts and standard parts researchable in a standardised system and made available to the developers in the 3D system (part preview in 2D/3D)
→ Differentiation according to active and inactive or new parts
- Search for in-house production parts and catalogue parts on a geometric basis
→ Additional, optional restriction via metadata



FINDING



RE-USE



CONTROL
PARTS
ACCESS

Our requirements and goals

- Better finding of existing parts, identification of preferred parts
- Improve the quality of the master data (complete specifications on weights, dimensions, manufacturer item numbers of purchased parts, etc.)
- Make standard parts and company standards more accessible
- Easy access to information on purchased parts



Basis for the introduction of PARTsolution at AMAZONE

- Catalogue parts and standards in a standardised system and made available to the developers in the 3D system
→ Differentiation according to standards
- Search for in-house products and external suppliers
→ Additional, optional restrictions



a geometric basis

The AMAZONE Group

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Geometric similarity search with CADENAS GEOsearch

Vision

AMAZONE

PLM Teamcenter

DWH

Gaste

ERP b7

CAD NX

Hude

ERP b7

CAD NX

Forbach

ERP b7

CAD NX

Leipzig

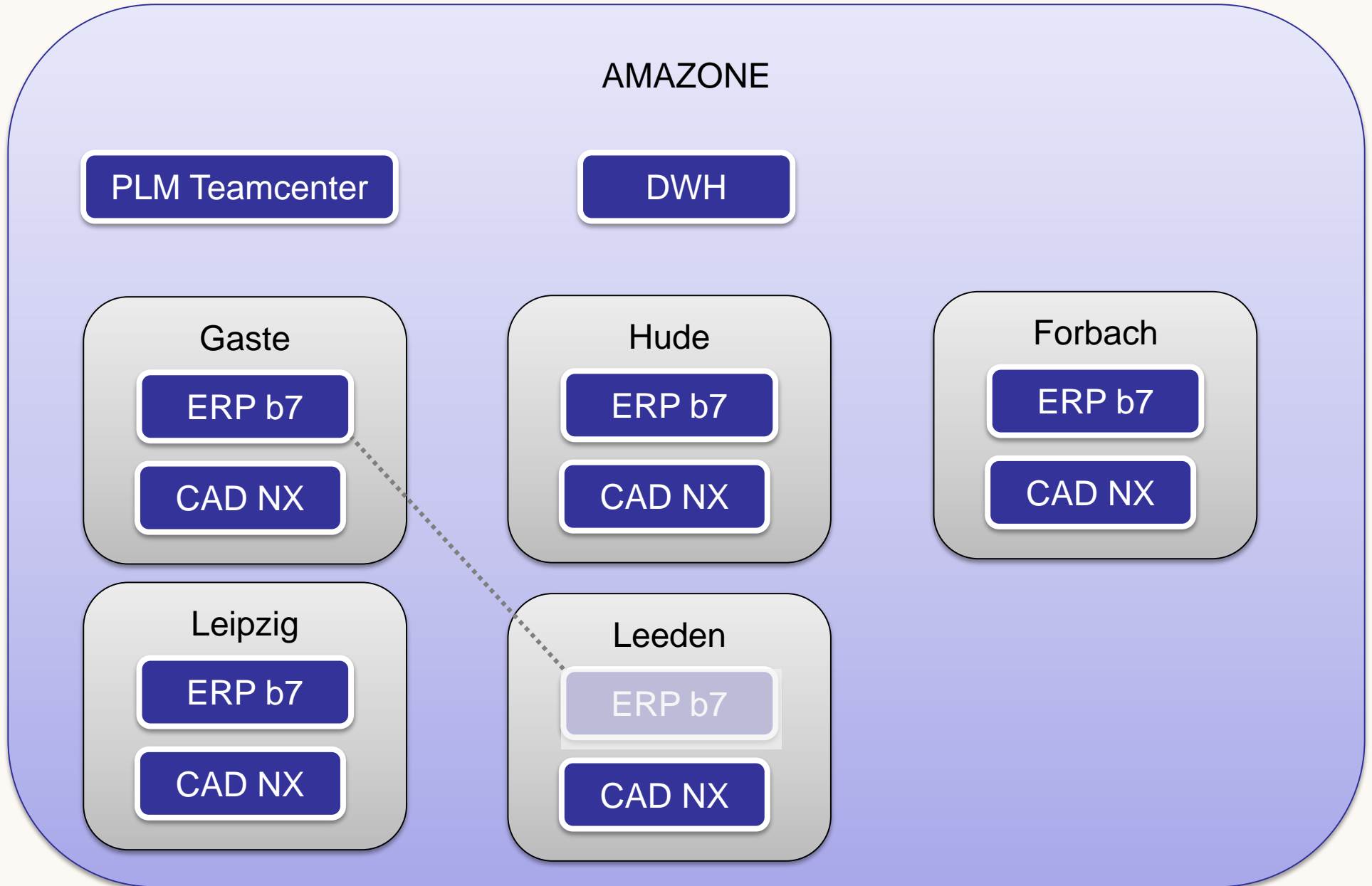
ERP b7

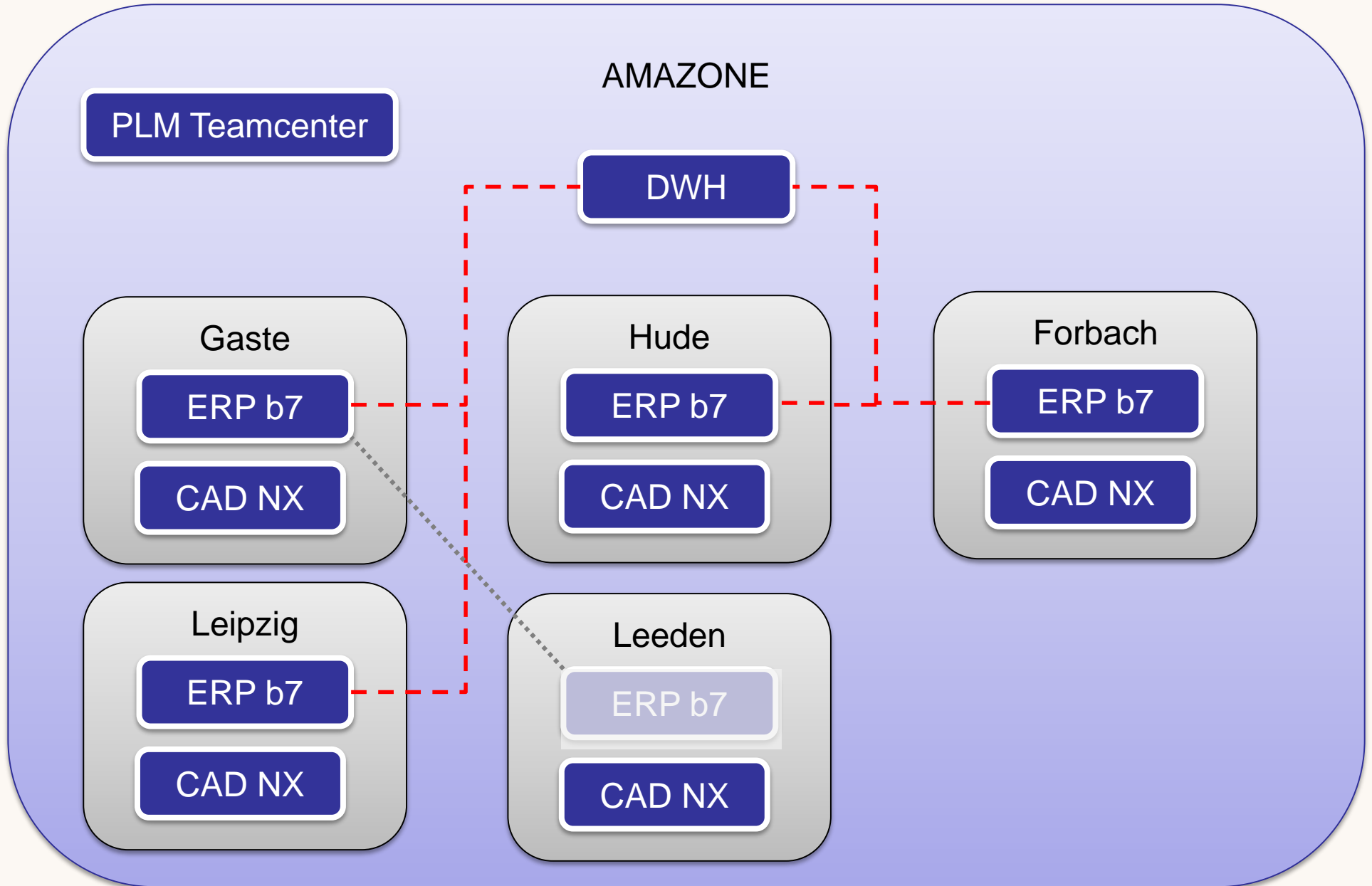
CAD NX

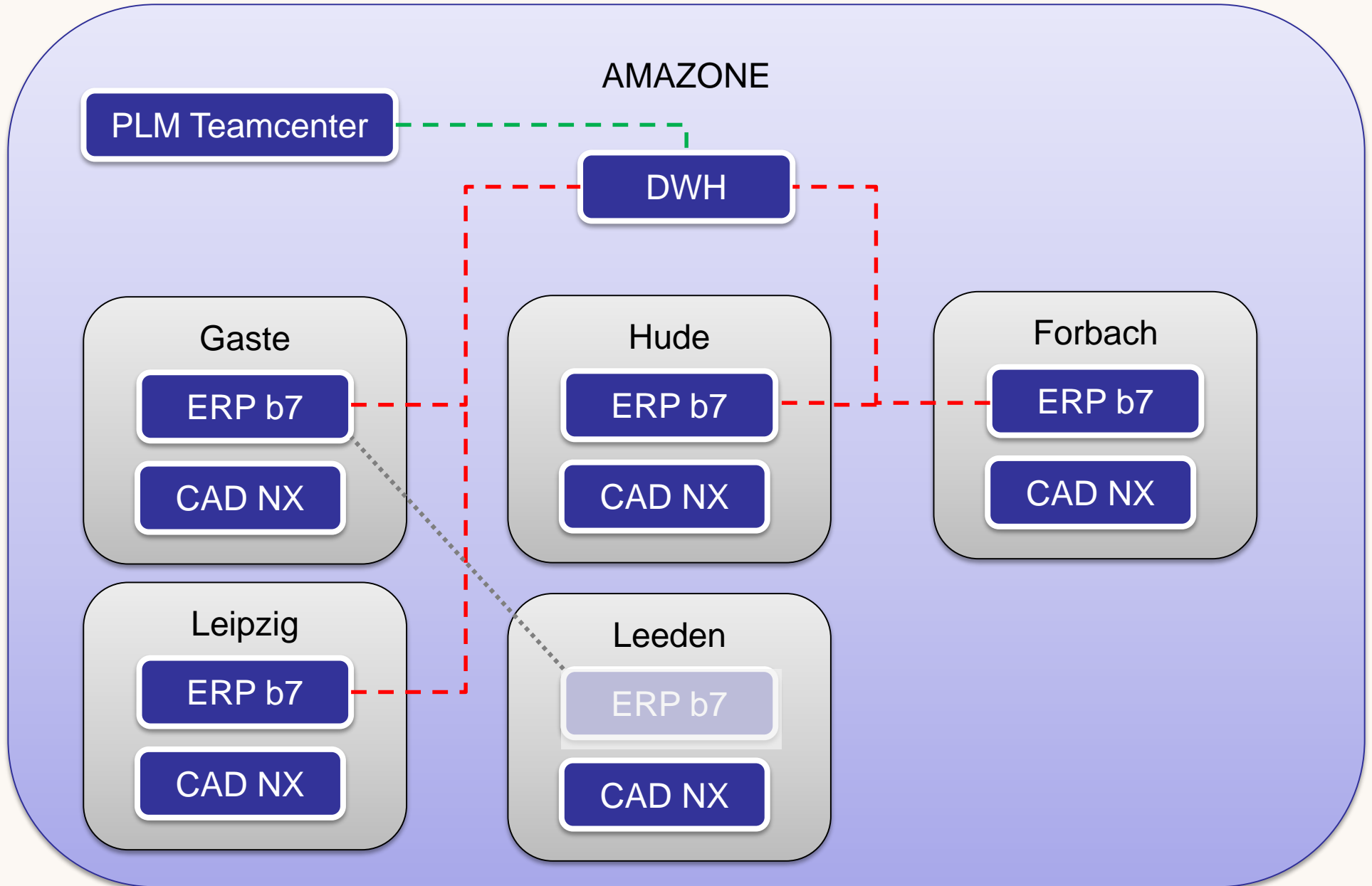
Leeden

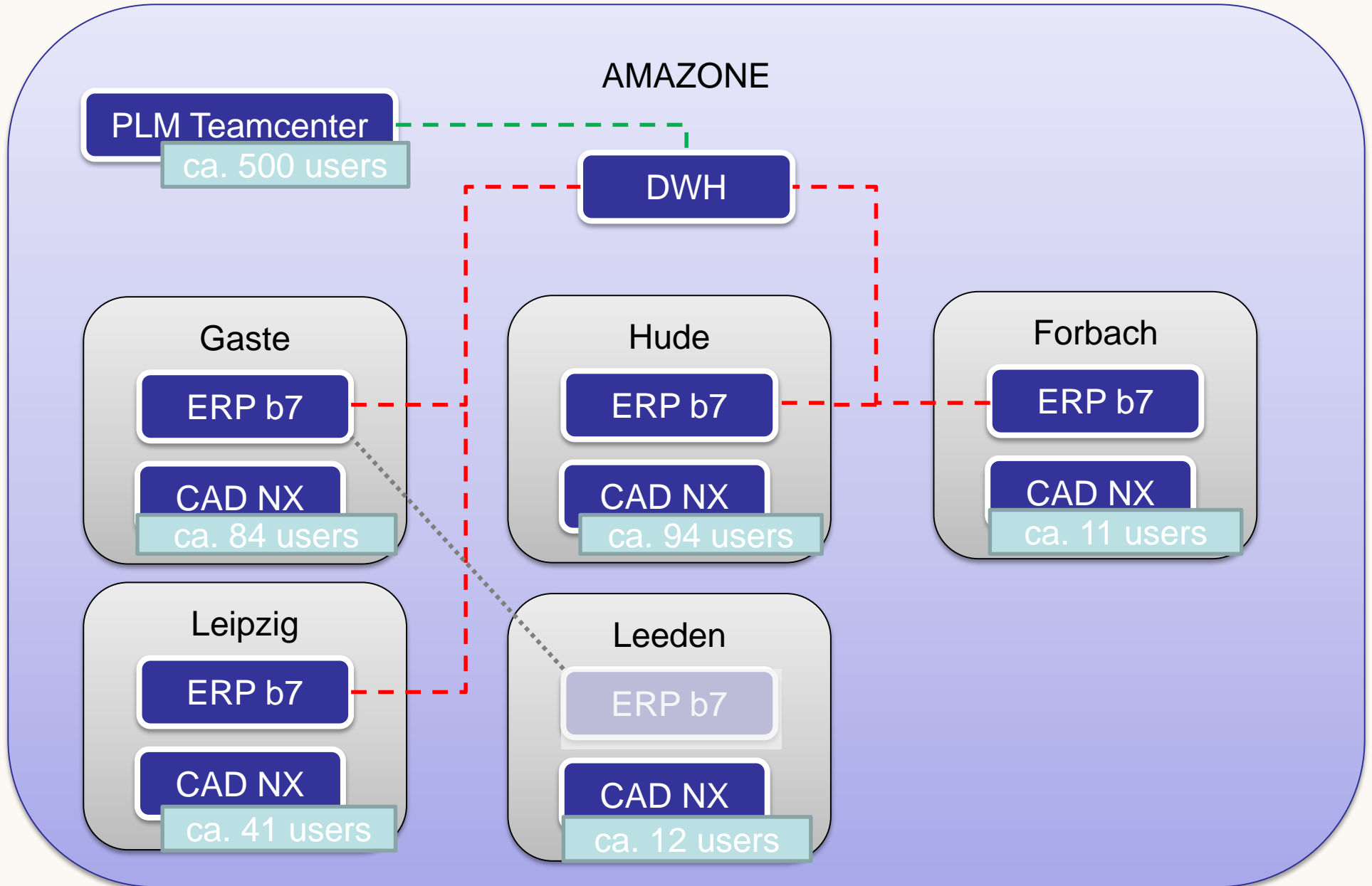
ERP b7

CAD NX

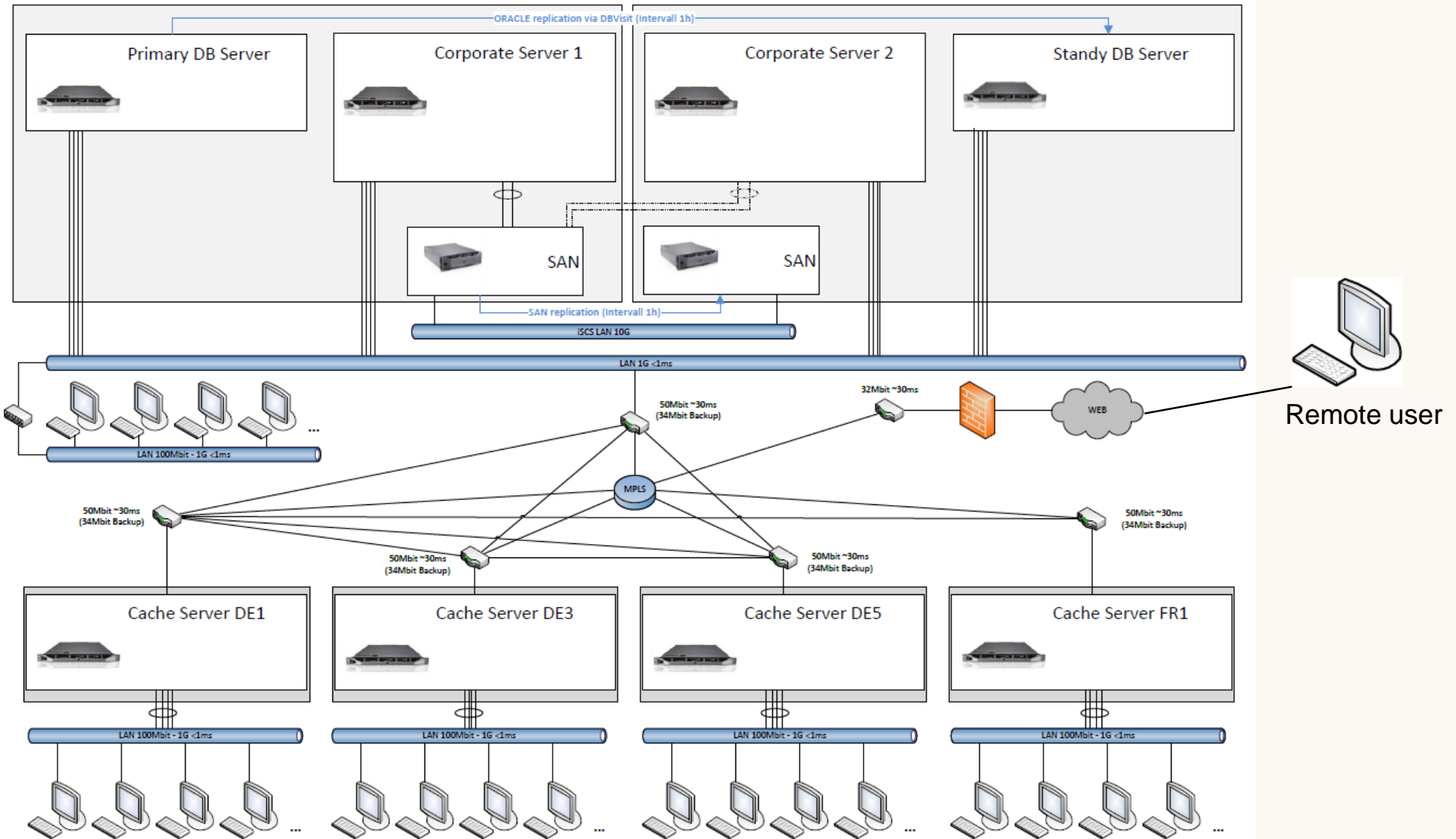




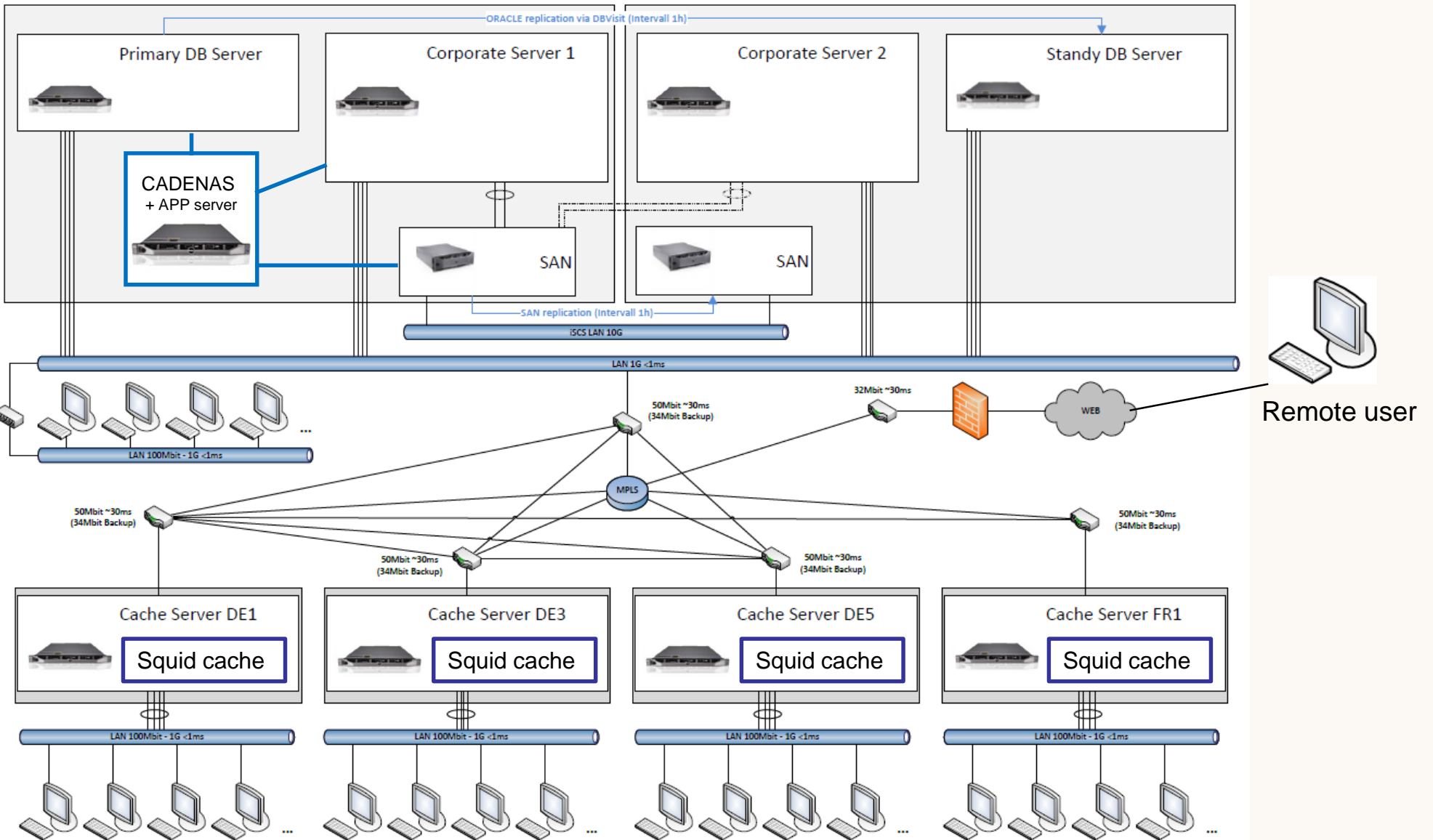


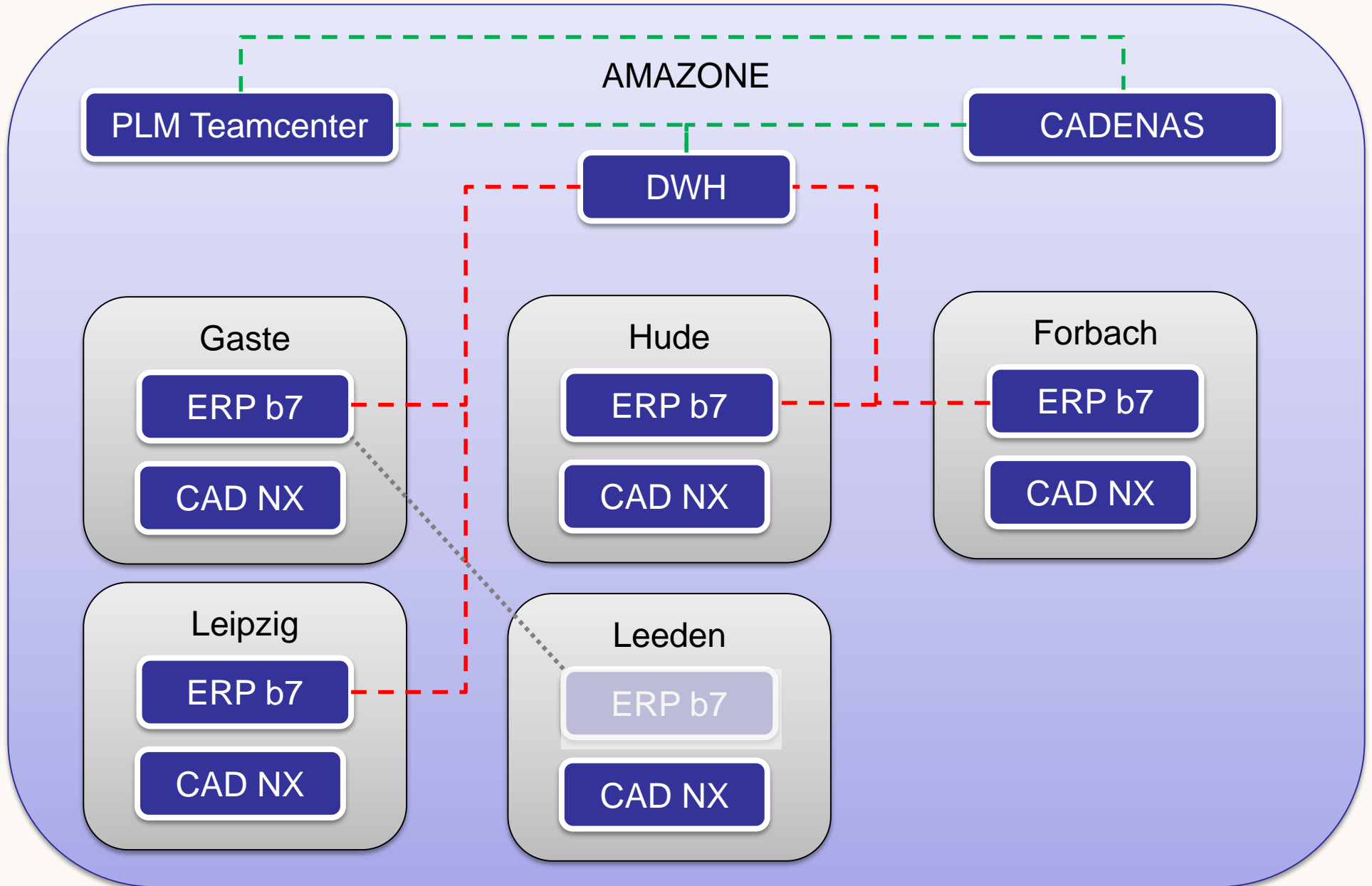


TEAMCENTER UA Server Network



TEAMCENTER UA Server Network





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Vision

Phase 1

Implementation of the
software

Phase 2

Start productive system

Phase 3

Analysis

Phase 1

Implementation of the software

- Application / comparison of the inventory data
- Layout of the catalogue structure
- Creation of the company standards catalogue (eCat)

Phase 2

Start productive system

Phase 3

Analysis

Phase 1

Implementation of the software

- Application / comparison of the inventory data
- Layout of the catalogue structure
- Creation of the company standards catalogue (eCat)

Phase 2

Start productive system

- Test run of the software
- Employee training
- Software release

Phase 3

Analysis

Phase 1

Implementation of the software

- Application / comparison of the inventory data
- Layout of the catalogue structure
- Creation of the company standards catalogue (eCat)

Phase 2

Start productive system

- Test run of the software
- Employee training
- Software release

Phase 3

Analysis

- Inventory data analysis
- Use of other tools

Phase 1

Start: 06 / 2014
Implementation of the software

- Application / comparison of the inventory data
- Layout of the catalogue structure
- Creation of the company standards catalogue (eCat)

Phase 2

→ Status today
Start productive system

- Test run of the software
- Employee training
- Software release

Phase 3

Analysis

- Inventory data analysis
- Use of other tools

Phase 1

Start: 06 / 2014
Implementation of the software

- Application / comparison of the inventory data
- Layout of the catalogue structure
- Creation of the component catalogue

Current service fees on the part of CADENAS for the project ca. 15 man-days

Phase 2

→ Status today
Start productive system

- Test run of the software
- Employee training
- Software release

Phase 3

Analysis

- Inventory data analysis
- Use of other tools

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Vision



Part categories at AMAZONE

→ **AMAZONE standard and catalogue parts**

All parts that are purchased externally.

→ **AMAZONE specific parts**

AMAZONE specific parts are parts that were specially developed by AMAZONE or for AMAZONE.

Part categories at AMAZONE

→ **AMAZONE standard and catalogue parts**

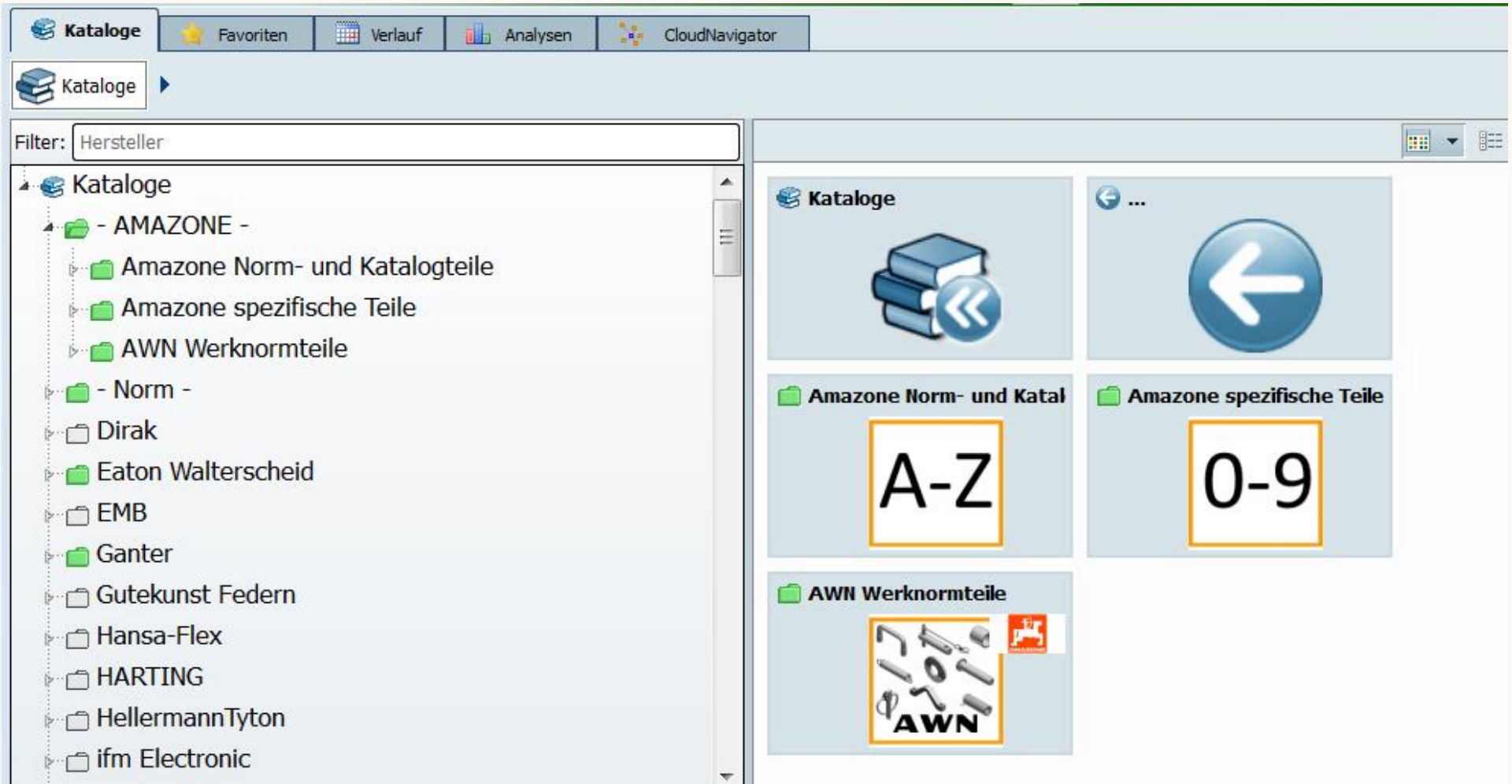
All parts that are purchased externally.

→ **AMAZONE specific parts**

AMAZONE specific parts are parts that were specially developed by AMAZONE or for AMAZONE.

New parts / Year	Active parts overall (parts with inventory)
1500	17800
2500	58200
4000	76000

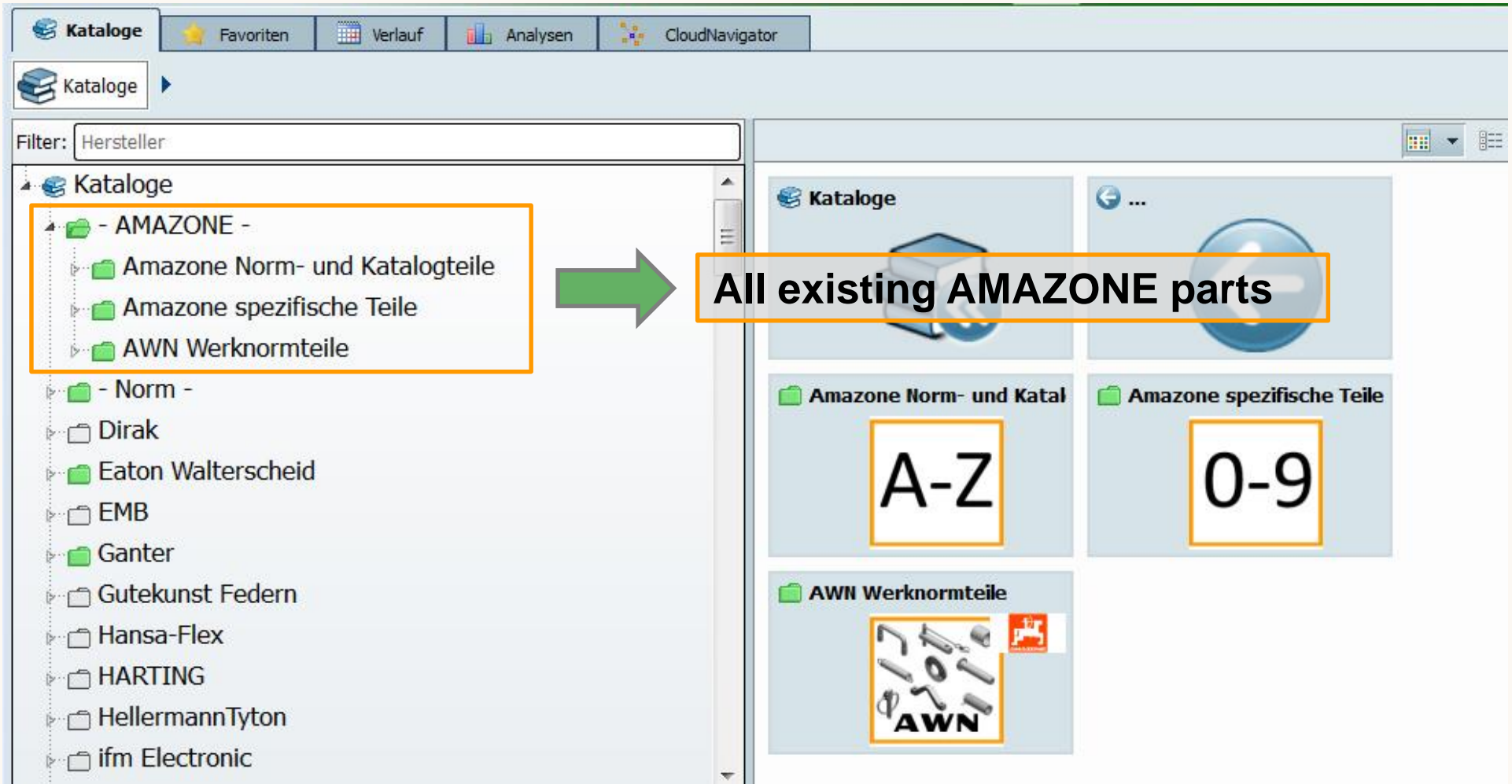
Parts management with CADENAS PARTsolutions – Folder structure



The screenshot displays the CADENAS PARTsolutions software interface, showing a folder structure for parts management. The interface is divided into several sections:

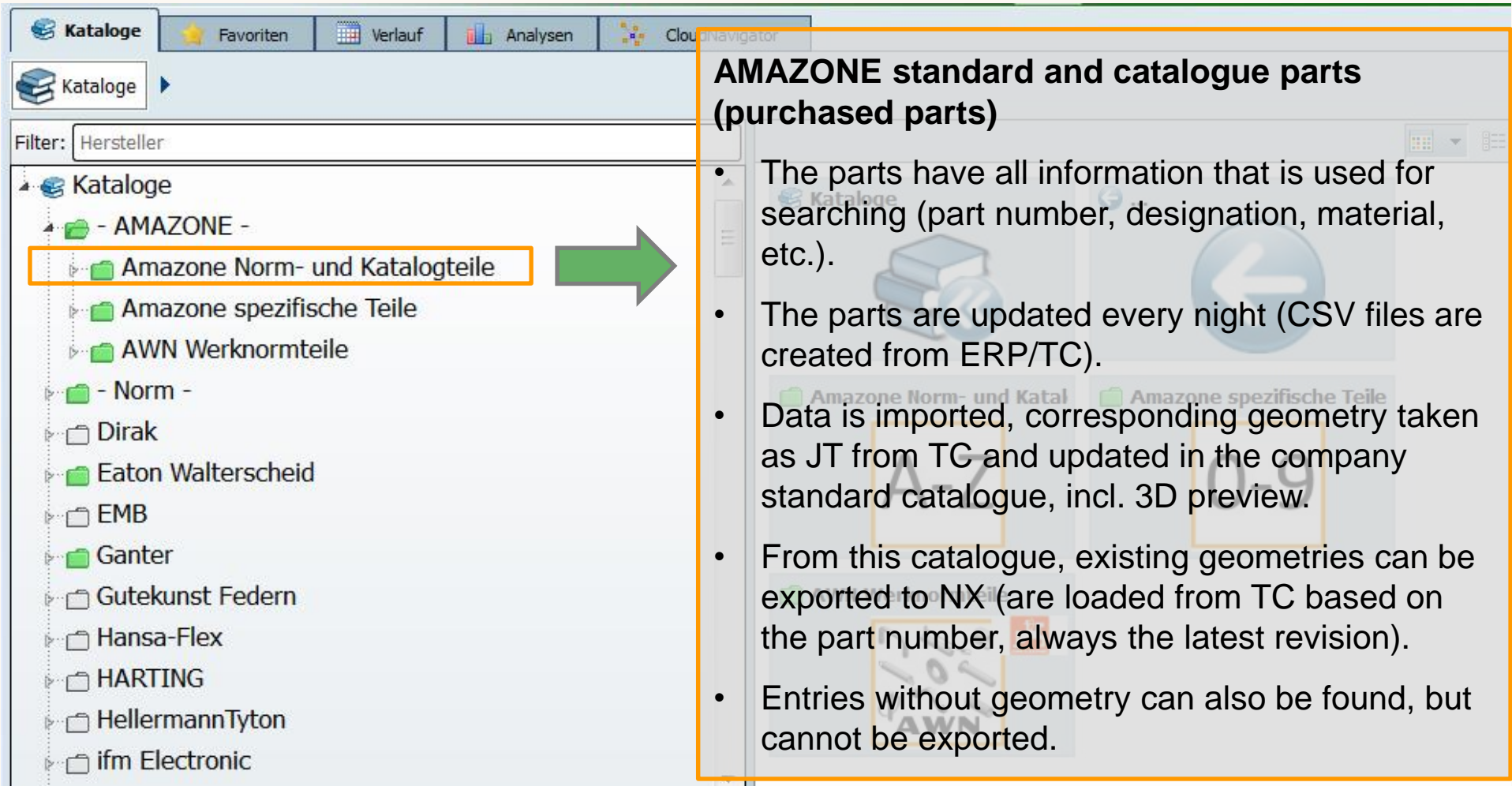
- Top Bar:** Contains navigation icons for **Kataloge**, **Favoriten**, **Verlauf**, **Analysen**, and **CloudNavigator**.
- Left Panel (Filter: Hersteller):** Shows a tree view of the folder structure under **Kataloge**. The structure is as follows:
 - AMAZONE -**
 - Amazone Norm- und Katalogteile
 - Amazone spezifische Teile
 - AWN Werknormteile
 - Norm -**
 - Dirak
 - Eaton Walterscheid
 - EMB
 - Ganter
 - Gutekunst Federn
 - Hansa-Flex
 - HARTING
 - HellermannTyton
 - ifm Electronic
- Main Content Area:** Displays a grid of folder thumbnails. The visible thumbnails are:
 - Kataloge** (with a book icon)
 - Amazone Norm- und Katalog** (with an **A-Z** index icon)
 - Amazone spezifische Teile** (with a **0-9** index icon)
 - AWN Werknormteile** (with an **AWN** logo icon)

Parts management with CADENAS PARTsolutions – Folder structure



The screenshot displays the CADENAS PARTsolutions software interface. On the left, a tree view shows a folder structure under 'Kataloge'. The 'AMAZONE' folder is expanded, showing sub-folders: 'Amazone Norm- und Katalogteile', 'Amazone spezifische Teile', and 'AWN Werknormteile'. A green arrow points from this 'AMAZONE' folder to a central text box containing the text 'All existing AMAZONE parts'. On the right, a grid view shows three categories: 'Amazone Norm- und Katalogteile' with an 'A-Z' index, 'Amazone spezifische Teile' with a '0-9' index, and 'AWN Werknormteile' with a grid of part images and the 'AWN' logo.

Parts management with CADENAS PARTsolutions – Folder structure



AMAZONE standard and catalogue parts (purchased parts)

- The parts have all information that is used for searching (part number, designation, material, etc.).
- The parts are updated every night (CSV files are created from ERP/TC).
- Data is imported, corresponding geometry taken as JT from TC and updated in the company standard catalogue, incl. 3D preview.
- From this catalogue, existing geometries can be exported to NX (are loaded from TC based on the part number, always the latest revision).
- Entries without geometry can also be found, but cannot be exported.



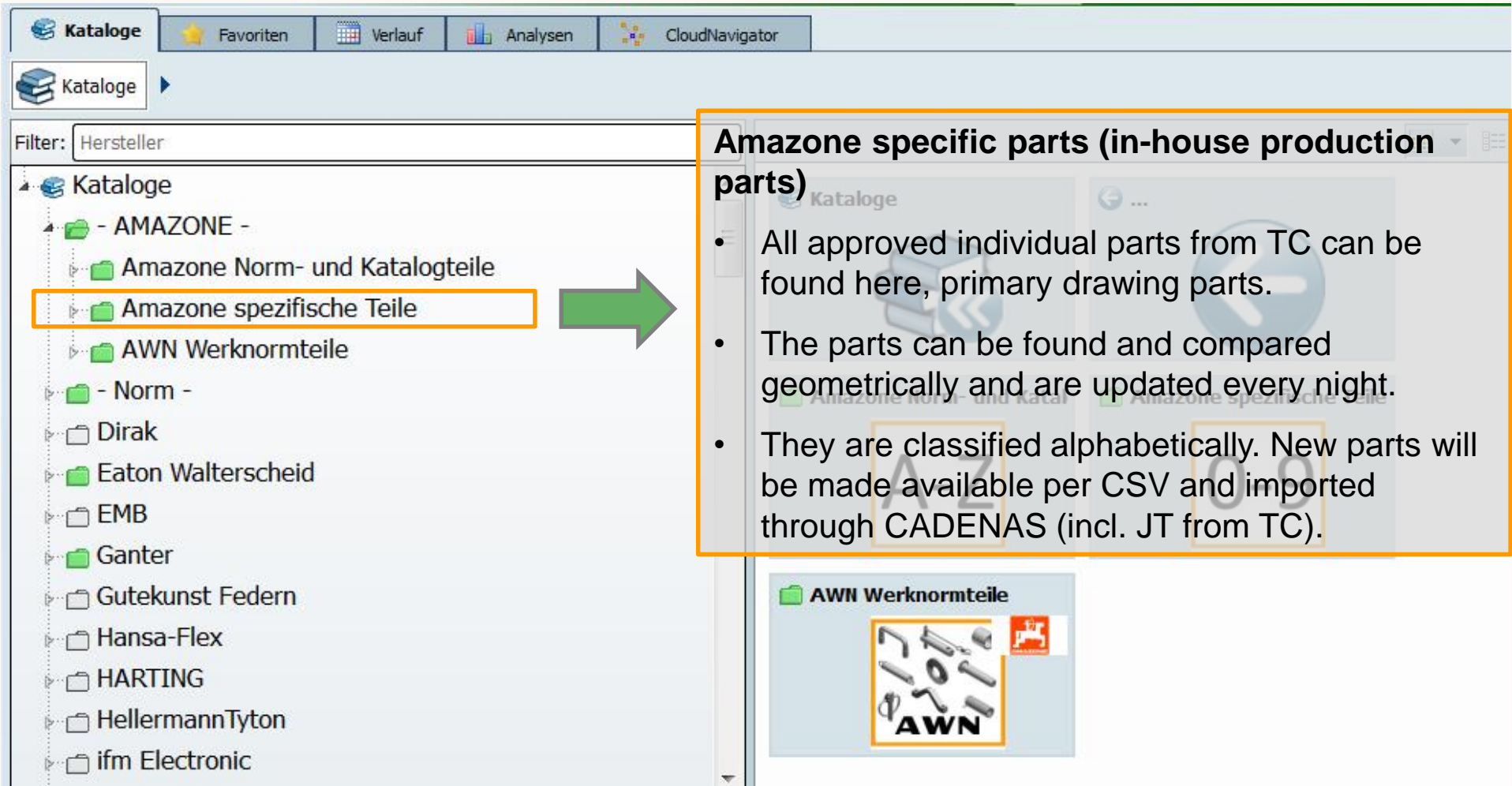
Parts management with CADENAS PARTsolutions – Folder structure

Filter: Hersteller

- Amazon Norm- und Katalogteile
- Amazon spezifische Teile
 -
 - #
 - 1
 - 2
 - 3
 - 4
 - 6
 - 7
 - 9
 - A
 - AB Blech LI - 78702689
 - AB Blech RE - 78702690
 - ABBLASHAUBE(02) - 976721
 - ABDECKBLECH_VORNE - 201926
 - ABDECKBL. (05/K5) - 939819
 - ABDECKBLECH - 123969255
 - ABDECKBLECH - 123995208
 - ABDECKBLECH - 140226021400
 - ABDECKBLECH - 72000824
 - ABDECKBLECH - 78702086
 - ABDECKBLECH - 881627
 - ABDECKBLECH - 911156
 - ABDECKBLECH - 920129
 - ABDECKBLECH - 920378
 - ABDECKBLECH - 924688
 - ABDECKBLECH - 924692
 - ABDECKBLECH - 925965
 - ABDECKBLECH - 942147

ABDECKBLECH - 72000824	ABDECKBLECH - 78702086	ABDECKBLECH - 881627	ABDECKBLECH - 911156	ABDECKBLECH - 920129
ABDECKBLECH - 920378	ABDECKBLECH - 924688	ABDECKBLECH - 924692	ABDECKBLECH - 925965	ABDECKBLECH - 942147
ABDECKBLECH - 961411	ABDECKBLECH - 961578	ABDECKBLECH - 962459	ABDECKBLECH - 963102	ABDECKBLECH - 966686
ABDECKBLECH - 966914	ABDECKBLECH - 983501	ABDECKBLECH - 983795	ABDECKBLECH - 986748	ABDECKBLECH - MOEL2010_021

Parts management with CADENAS PARTsolutions – Folder structure



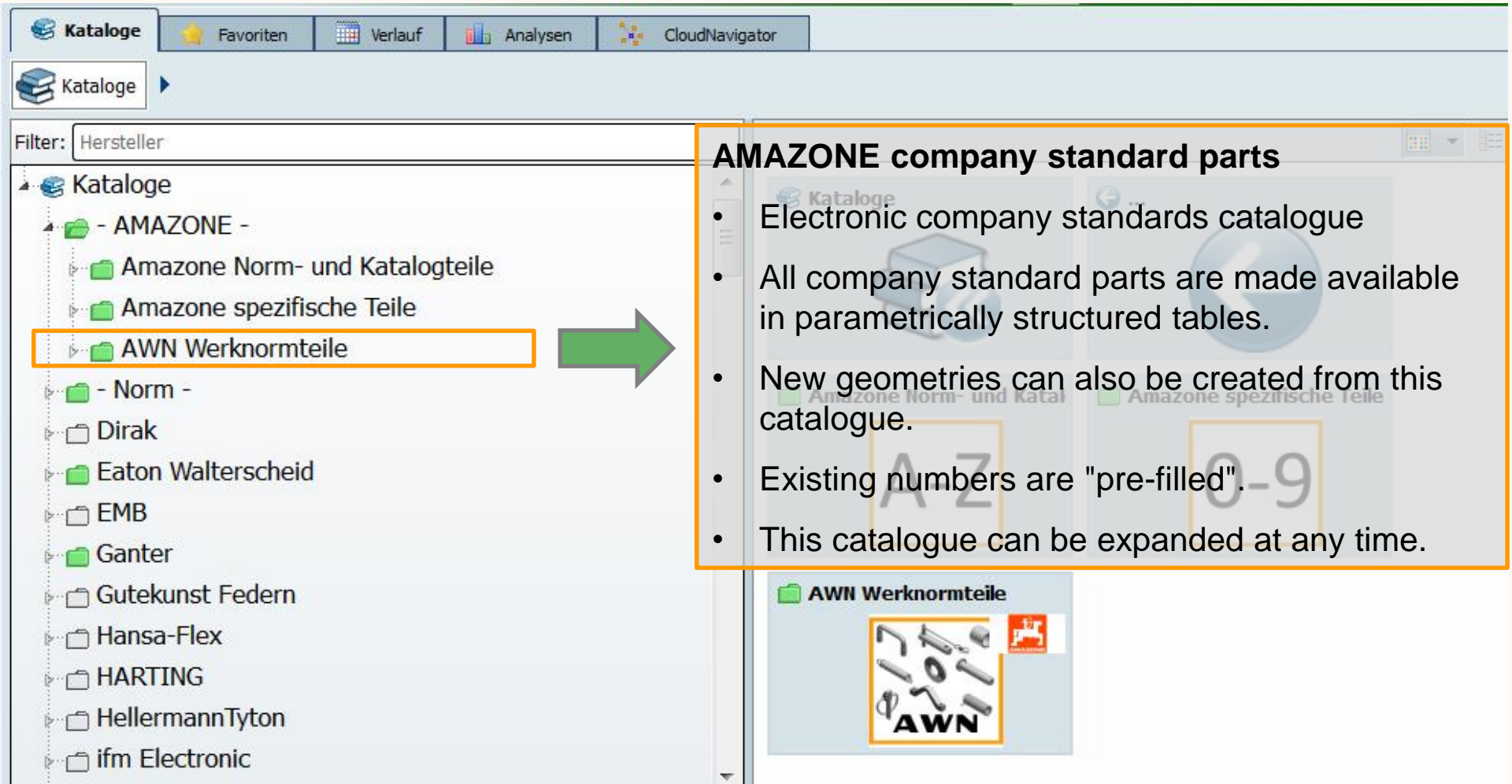
The screenshot shows the CADENAS PARTsolutions software interface. The top navigation bar includes 'Kataloge', 'Favoriten', 'Verlauf', 'Analysen', and 'CloudNavigator'. The left sidebar shows a folder structure under 'Kataloge' with a filter set to 'Hersteller'. The folder 'Amazone spezifische Teile' is highlighted with an orange box, and a green arrow points from it to a callout box on the right. The callout box contains the following text:

Amazone specific parts (in-house production parts)

- All approved individual parts from TC can be found here, primary drawing parts.
- The parts can be found and compared geometrically and are updated every night.
- They are classified alphabetically. New parts will be made available per CSV and imported through CADENAS (incl. JT from TC).

Below the callout box, a preview of the 'AWN Werknormteile' folder is shown, featuring a grid of mechanical parts and the 'AWN' logo.

Parts management with CADENAS PARTsolutions – Folder structure




Filter: Hersteller

- Kataloge
 - AMAZONE -
 - Amazone Norm- und Katalogteile
 - Amazone spezifische Teile
 - AWN Werknormteile**
 - Norm -
 - Dirak
 - Eaton Walterscheid
 - EMB
 - Ganter
 - Gutekunst Federn
 - Hansa-Flex
 - HARTING
 - HellermannTyton
 - ifm Electronic

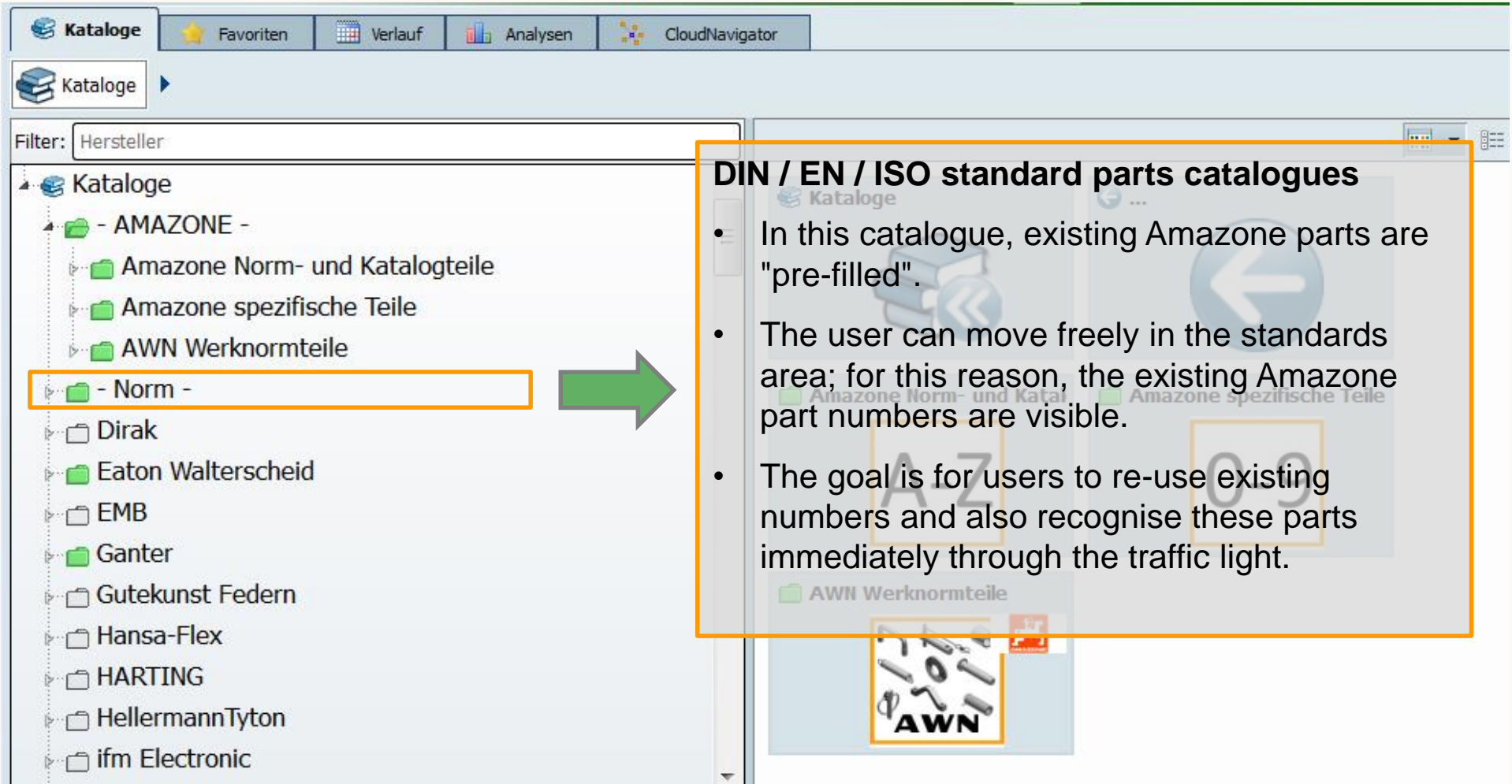
AMAZONE company standard parts

- Electronic company standards catalogue
- All company standard parts are made available in parametrically structured tables.
- New geometries can also be created from this catalogue.
- Existing numbers are "pre-filled".
- This catalogue can be expanded at any time.

AWN Werknormteile



Parts management with CADENAS PARTsolutions – Folder structure



Filter: Hersteller

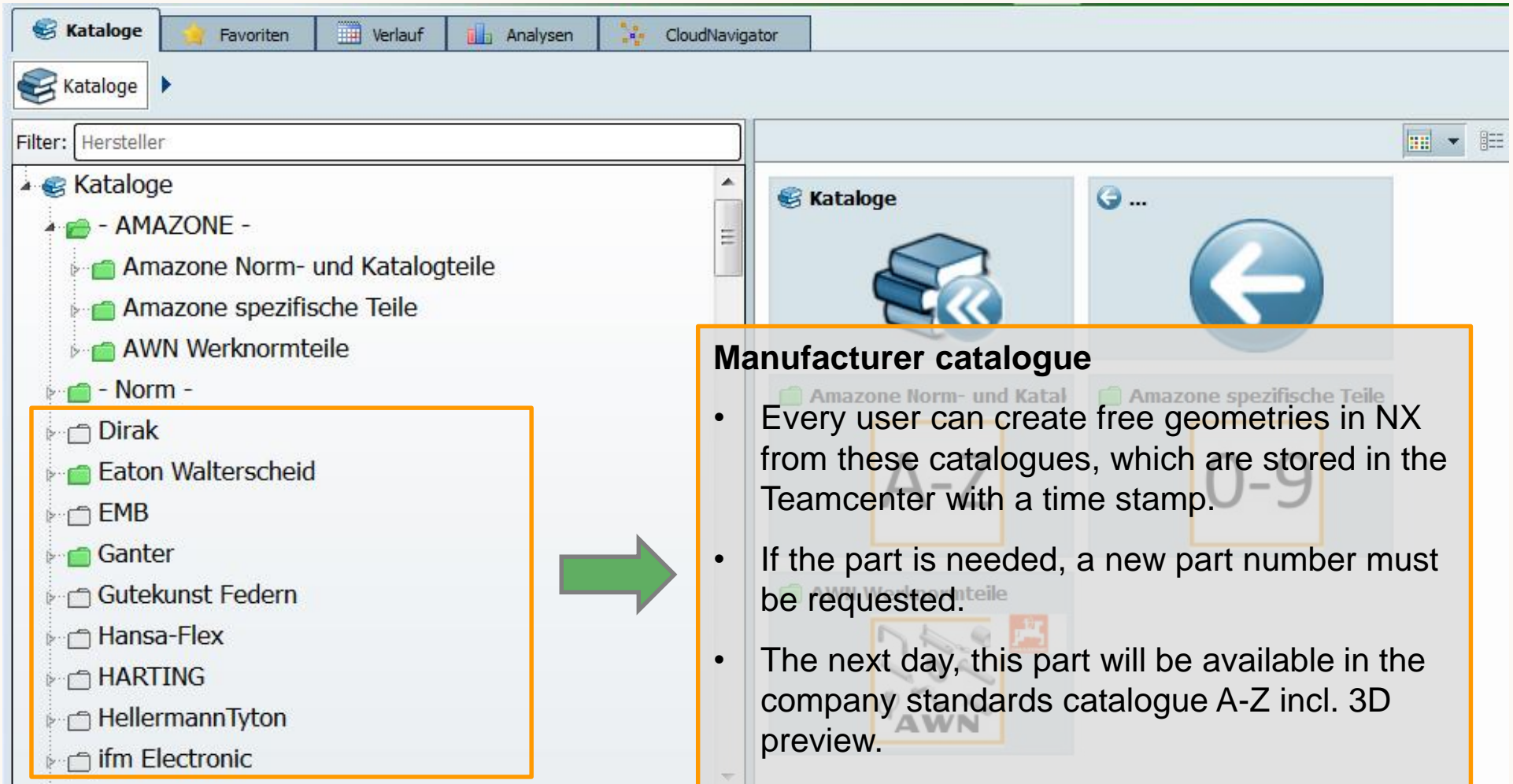
Kataloge

- AMAZONE -
 - Amazon Norm- und Katalogteile
 - Amazon spezifische Teile
 - AWN Werknormteile
 - Norm -
 - Dirak
 - Eaton Walterscheid
 - EMB
 - Ganter
 - Gutekunst Federn
 - Hansa-Flex
 - HARTING
 - HellermannTyton
 - ifm Electronic

DIN / EN / ISO standard parts catalogues

- In this catalogue, existing Amazone parts are "pre-filled".
- The user can move freely in the standards area; for this reason, the existing Amazone part numbers are visible.
- The goal is for users to re-use existing numbers and also recognise these parts immediately through the traffic light.

Parts management with CADENAS PARTsolutions – Folder structure



Filter: Hersteller

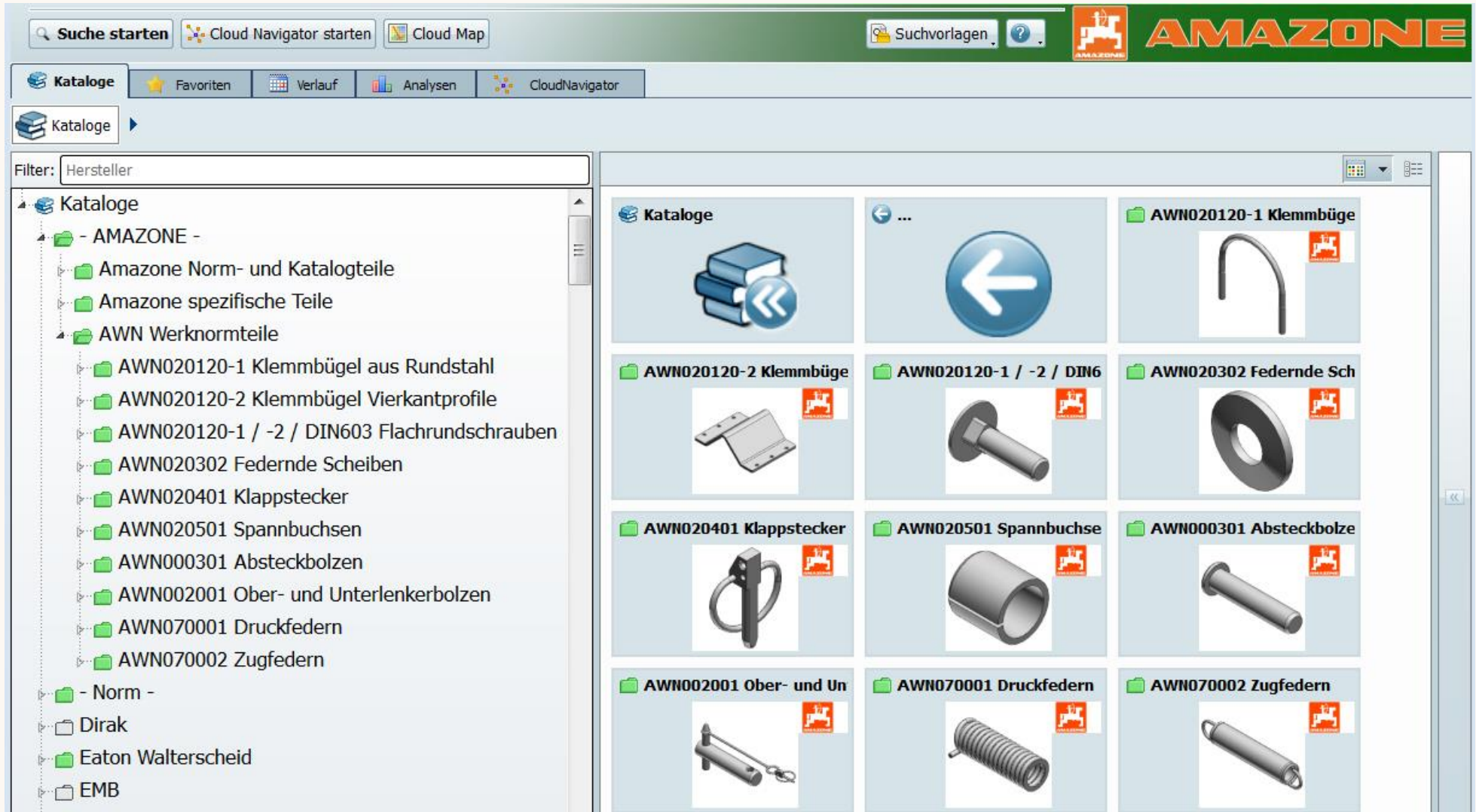
Kataloge

- AMAZONE -
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 - HARTING
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Manufacturer catalogue

- Every user can create free geometries in NX from these catalogues, which are stored in the Teamcenter with a time stamp.
- If the part is needed, a new part number must be requested.
- The next day, this part will be available in the company standards catalogue A-Z incl. 3D preview.

Parts management with CADENAS eCATALOGsolutions – Company standard parts



The screenshot displays the CADENAS eCATALOGsolutions software interface. At the top, there is a navigation bar with buttons for 'Suche starten', 'Cloud Navigator starten', and 'Cloud Map'. The main header features the 'AMAZONE' logo and a search bar with 'Suchvorlagen' and a help icon. Below the header, a menu bar includes 'Kataloge', 'Favoriten', 'Verlauf', 'Analysen', and 'CloudNavigator'. The left sidebar shows a tree view of catalogs, with 'Hersteller' as the filter. The main content area displays a grid of 12 parts, each with a thumbnail image and a title. The parts are organized into folders under 'Kataloge'.

Filter: Hersteller

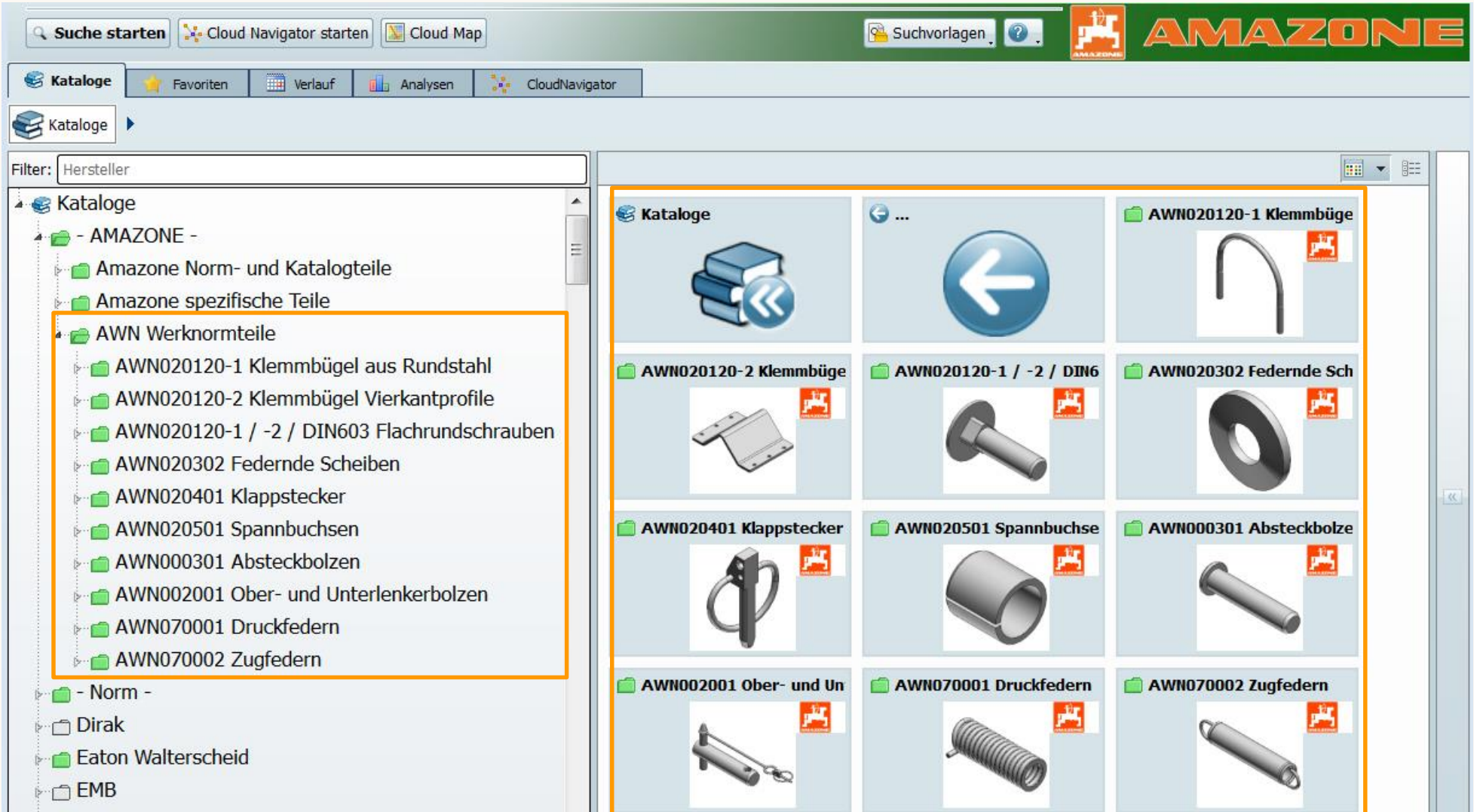
Kataloge

- AMAZONE -
 - Amazone Norm- und Katalogteile
 - Amazone spezifische Teile
 - AWN Werknormteile
 - AWN020120-1 Klemmbügel aus Rundstahl
 - AWN020120-2 Klemmbügel Vierkantprofile
 - AWN020120-1 / -2 / DIN603 Flachrundschauben
 - AWN020302 Federnde Scheiben
 - AWN020401 Klappstecker
 - AWN020501 Spannbuchsen
 - AWN000301 Absteckbolzen
 - AWN002001 Ober- und Unterlenkerbolzen
 - AWN070001 Druckfedern
 - AWN070002 Zugfedern
- Norm -
 - Dirak
 - Eaton Walterscheid
 - EMB

Grid of Parts:

Kataloge	← ...	AWN020120-1 Klemmbügel
AWN020120-2 Klemmbügel	AWN020120-1 / -2 / DIN6	AWN020302 Federnde Sch
AWN020401 Klappstecker	AWN020501 Spannbuchse	AWN000301 Absteckbolze
AWN002001 Ober- und Un	AWN070001 Druckfedern	AWN070002 Zugfedern

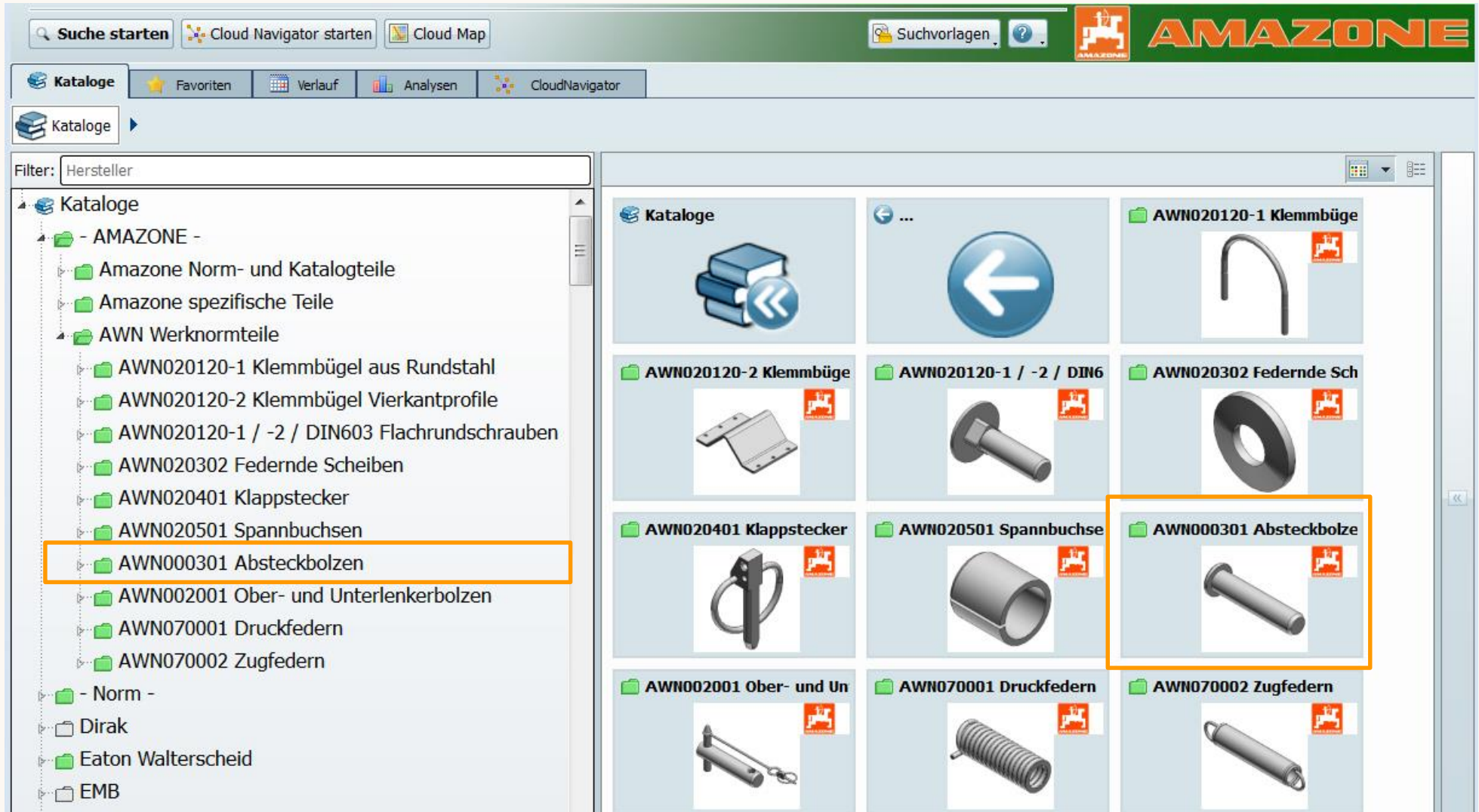
Parts management with CADENAS eCATALOGsolutions – Company standard parts



The screenshot displays the CADENAS eCATALOGsolutions interface for AMAZONE. The top navigation bar includes buttons for 'Suche starten', 'Cloud Navigator starten', and 'Cloud Map', along with search suggestions and the AMAZONE logo. Below this, there are tabs for 'Kataloge', 'Favoriten', 'Verlauf', 'Analysen', and 'CloudNavigator'. The left sidebar shows a tree view of catalogs, with 'AWN Werknormteile' selected and highlighted in orange. The main content area displays a grid of 12 product thumbnails, each with a 3D model and a small AMAZONE logo. The thumbnails are arranged in a 4x3 grid and include the following part numbers and names:

- Kataloge** (Navigation icons)
- AWN020120-1 Klemmbügel** (Clamp)
- AWN020120-2 Klemmbügel** (Clamp)
- AWN020120-1 / -2 / DIN6** (Clamp)
- AWN020302 Federnde Sch** (Spring washer)
- AWN020401 Klappstecker** (Clamp)
- AWN020501 Spannbuchse** (Clamp)
- AWN000301 Absteckbolze** (Pin)
- AWN002001 Ober- und Un** (Pin)
- AWN070001 Druckfedern** (Compression spring)
- AWN070002 Zugfedern** (Tension spring)

Parts management with CADENAS eCATALOGsolutions – Company standard parts



The screenshot displays the CADENAS eCATALOGsolutions interface for AMAZONE. The top navigation bar includes buttons for 'Suche starten', 'Cloud Navigator starten', and 'Cloud Map', along with search suggestions and the AMAZONE logo. Below this, there are tabs for 'Kataloge', 'Favoriten', 'Verlauf', 'Analysen', and 'CloudNavigator'. The left sidebar shows a tree view of catalogs, with 'AWN000301 Absteckbolzen' highlighted in an orange box. The main content area displays a grid of product cards, each with a thumbnail image and a part number. The card for 'AWN000301 Absteckbolzen' is also highlighted in an orange box.

Filter: Hersteller

Kataloge

- AMAZONE -
 - Amazone Norm- und Katalogteile
 - Amazone spezifische Teile
 - AWN Werknormteile
 - AWN020120-1 Klemmbügel aus Rundstahl
 - AWN020120-2 Klemmbügel Vierkantprofile
 - AWN020120-1 / -2 / DIN603 Flachrundsrauben
 - AWN020302 Federnde Scheiben
 - AWN020401 Klappstecker
 - AWN020501 Spannbuchsen
 - AWN000301 Absteckbolzen**
 - AWN002001 Ober- und Unterlenkerbolzen
 - AWN070001 Druckfedern
 - AWN070002 Zugfedern
- Norm -
 - Dirak
 - Eaton Walterscheid
 - EMB

Product Grid:

Kataloge	← ...	AWN020120-1 Klemmbügel
AWN020120-2 Klemmbügel	AWN020120-1 / -2 / DIN6	AWN020302 Federnde Sch
AWN020401 Klappstecker	AWN020501 Spannbuchse	AWN000301 Absteckbolze
AWN002001 Ober- und Un	AWN070001 Druckfedern	AWN070002 Zugfedern



Parts management with CADENAS eCATALOGsolutions – Company standard parts

The screenshot displays the CADENAS eCATALOGsolutions interface. At the top, there is a navigation bar with tabs for 'Kataloge', 'Favoriten', 'Verlauf', 'Analysen', 'CloudNavigator', and 'Suchergebnisse'. Below this, a breadcrumb trail shows the path: 'Kataloge' > '- AMAZONE -' > 'AWN Werknormteile' > 'AWN000301 Abste...' > 'AWN000301'. A search filter is set to 'Hersteller'. The left sidebar shows a tree view of catalogs, with 'AWN000301 - Absteckbolzen - Form B1' selected. The main area displays four product cards for 'AWN000301 Absteckbolzen' in different forms (A, A1, A2, B1).

Part Number	Description	Form
AWN000301	Absteckbolzen	Form A
AWN000301	Absteckbolzen	Form A1
AWN000301	Absteckbolzen	Form A2
AWN000301	Absteckbolzen	Form B1

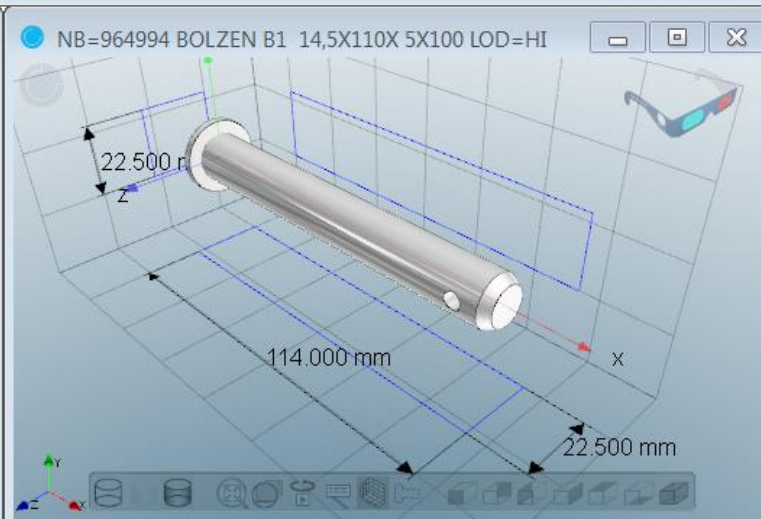
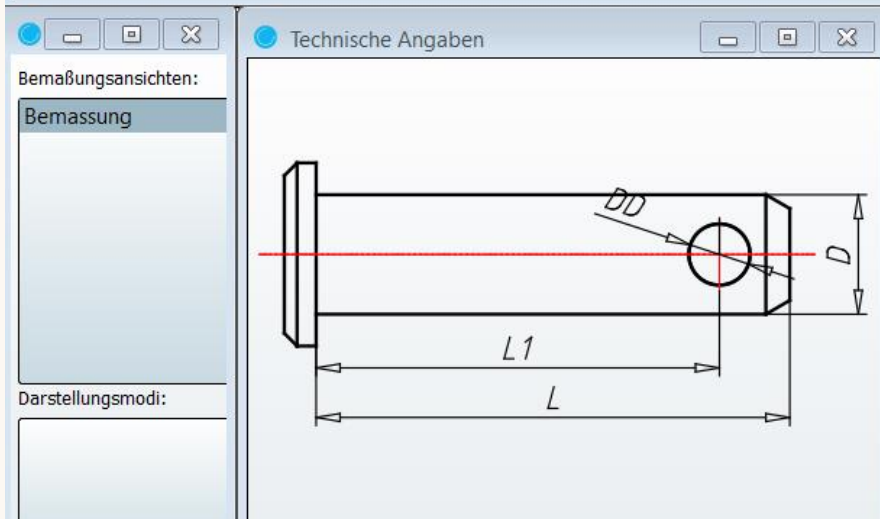


Parts management with CADENAS eCATALOGsolutions – Company standard parts

964994 BOLZEN B1 14,5X110X 5X100

Tabelle Liste

	TNR	BEN	D	L	DD	L1	CNSMAT	INFOPDF
	Teilenummer	Benennung	Durchmess...	Länge [mm]	Durchmess...	Länge [mm]	Werkstoff	Werknorm
✓	1	BOLZEN B1 10X 27X 4X 20	10.0	27.0	4.00	20.00	RD 10278 18h9X 31 1.4301	AWN000301
✓	2	BOLZEN B1 10X22,5X4,5X14,25	10.0	22.5	4.50	14.25	RD 10278 16H9 1.4104	AWN000301
✓	3	BOLZEN B1 10X26X 3X21 (FE//ZN12//C)	10.0	26.0	3.00	21.00	RD 10278 15H9X 30 S355J2C+C	AWN000301
✓	4	BOLZEN B1 11,5X53X4,5X49 (FE//ZN12//C)	11.5	53.0	4.50	49.00	RD 10278 20h9X57 S355J2C+C	AWN000301
✓	5	BOLZEN B1 11,8X 57X 4X 50	11.8	57.0	4.00	50.00	RD 10278 16X 95 1.4301	AWN000301
✓	6	BOLZEN B1 12X 50X 4X 42	12.0	50.0	4.00	42.00	RD 10278 22H9 1.4104	AWN000301
✓	7	BOLZEN B1 12X 78X 4X 69 (FE//ZN12//C)	12.0	78.0	4.00	69.00	-	AWN000301
✓	8	BOLZEN B1 12X115X 5X109,5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
✓	9	BOLZEN B1 12X50X4X41 (FE//ZN12//C)	12.0	50.0	4.00	41.00	RD 10278 20X 66 S355J2G	AWN000301
✓	10	BOLZEN B1 14,5X110X 5X100	14.5	110.0	5.00	100.00	RD 10278 25X117 S355J2C+C	AWN000301
✓	11	BOLZEN B1 14X 35X 4X 30	14.0	35.0	4.00	30.00	RD 10278 22H9 1.4104	AWN000301
✓	12	BOLZEN B1 14X70X 4X62 (FE//ZN12//C)	14.0	70.0	4.00	62.00	RD 10278 22X 74 S355J2C+C	AWN000301
✓	13	BOLZEN B1 15,5X130X4,5X124 (FE//ZN12//C)	15.5	130.0	4.50	124.00	RD 10278 25X 135 S355J2C+C	AWN000301





Parts management with CADENAS eCATALOGsolutions – Company standard parts

964994 BOLZEN B1 14,5X110X 5X100

Tabellenansichten: Tabelle Liste

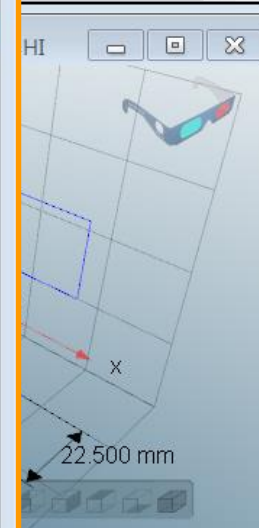
	TNR	BEN	D	L	DD	L1	CNSMAT	INFOPDF
	Teilenummer	Benennung	Durchmess...	Länge [mm]	Durchmess...	Länge [mm]	Werkstoff	Werknorm
1	979023	BOLZEN B1 10X 27X 4X 20	10.0	27.0	4.00	20.00	RD 10278 18h9X 31 1.4301	AWN000301
2	919064	BOLZEN B1 10X22,5X4,5X14,25	10.0	22.5	4.50	14.25	RD 10278 16H9 1.4104	AWN000301
3	992885	BOLZEN B1 10X26X 3X21 (FE//ZN12//C)	10.0	26.0	3.00	21.00	RD 10278 15H9X 30 S355J2C+C	AWN000301
4	971385	BOLZEN B1 11,5X53X4,5X49 (FE//ZN12//C)	11.5	53.0	4.50	49.00	RD 10278 20h9X57 S355J2C+C	AWN000301
5	989758	BOLZEN B1 11,8X 57X 4X 50	11.8	57.0	4.00	50.00	RD 10278 16X 95 1.4301	AWN000301
6	932958	BOLZEN B1 12X 50X 4X 42	12.0	50.0	4.00	42.00	RD 10278 22H9 1.4104	AWN000301
7	990185	BOLZEN B1 12X 78X 4X 69 (FE//ZN12//C)	12.0	78.0	4.00	69.00	-	AWN000301
8	93592	BOLZEN B1 12X115X 5X109 5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
9	207431	BOLZEN B1 12X50X4X41 (FE//ZN12//C)	12.0	50.0	4.00	41.00	RD 10278 20X 66 S355J2G	AWN000301
10	964994	BOLZEN B1 14,5X110X 5X100	14.5	110.0	5.00	100.00	RD 10278 25X117 S355J2C+C	AWN000301
11	93592	BOLZEN B1 12X115X 5X109 5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
12	93592	BOLZEN B1 12X115X 5X109 5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
13	93592	BOLZEN B1 12X115X 5X109 5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301

Creating variations

Variante anlegen

Variable	Wert (modifiziert)	Wert (Ausgangszeile)
TNR	Beispiel Variante1	964994
BEN	BOLZEN B1 16,5X110X 5X100	BOLZEN B1 14,5X110X 5X100
D	16.5	14.5
L	80.0	110.0
DD	5.00	5.00
L1	72	100.00
CNSMAT	RD 10278 25X117 S355J2C+C	RD 10278 25X117 S355J2C+C
INFOPDF	AWN000301	AWN000301
D0	24	22.50
LO	4.00	4.00
W	1.60	1.60
C	3.00	3.00

Buttons: Weiter, Abbruch



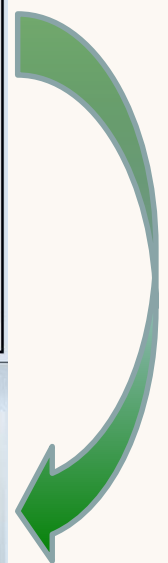


Parts management with CADENAS eCATALOGsolutions – Company standard parts

Beispiel Variante1 BOLZEN B1 16,5X110X 5X100

	TNR	BEN	D	L	DD	L1	CNSMAT	INFOPDF
	Teilenummer	Benennung	Durchmess...	Länge [mm]	Durchmess...	Länge [mm]	Werkstoff	Werknorm
13	209185	BOLZEN B1 12X 78X 4X 69 (FE//ZN12//C)	12.0	78.0	4.00	69.00	-	AWN000301
14	209185	BOLZEN B1 12X 78X 4X 69 (FE//ZN12//C)	12.0	78.0	4.00	69.00	-	AWN000301
15	966592	BOLZEN B1 12X115X 5X109,5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
16	966592	BOLZEN B1 12X115X 5X109,5 (FE//ZN12//C)	12.0	115.0	5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
17	207431	BOLZEN B1 12X50X4X41 (FE//ZN12//C)	12.0	50.0	4.00	41.00	RD 10278 20X 66 S355J2G	AWN000301
18	207431	BOLZEN B1 12X50X4X41 (FE//ZN12//C)	12.0	50.0	4.00	41.00	RD 10278 20X 66 S355J2G	AWN000301
19	964994	BOLZEN B1 14,5X110X 5X100	14.5	110.0	5.00	100.00	RD 10278 25X117 S355J2C+C	AWN000301
20	Beispiel Variante1	BOLZEN B1 16,5X110X 5X100	16.5	80.0	5.00	72.00	RD 10278 25X117 S355J2C+C	AWN000301
21	964994	BOLZEN B1 14,5X110X 5X100	14.5	110.0	5.00	100.00	RD 10278 25X117 S355J2C+C	AWN000301
22	914820	BOLZEN B1 14X 35X 4X 30	14.0	35.0	4.00	30.00	RD 10278 22H9 1.4104	AWN000301
23	914820	BOLZEN B1 14X 35X 4X 30	14.0	35.0	4.00	30.00	RD 10278 22H9 1.4104	AWN000301
24	996436	BOLZEN B1 14X70X 4X62 (FE//ZN12//C)	14.0	70.0	4.00	62.00	RD 10278 22X 74 S355J2C+C	AWN000301
25	996436	BOLZEN B1 14X70X 4X62 (FE//ZN12//C)	14.0	70.0	4.00	62.00	RD 10278 22X 74 S355J2C+C	AWN000301
26	972905	BOLZEN B1 15,5X130X4,5X124 (FE//ZN12//C)	15.5	130.0	4.50	124.00	RD 10278 25X 135 S355J2C+C	AWN000301
27	972905	BOLZEN B1 15,5X130X4,5X124 (FE//ZN12//C)	15.5	130.0	4.50	124.00	RD 10278 25X 135 S355J2C+C	AWN000301
28	955922	BOLZEN B1 16X 22X 6X 15	16.0	22.0	6.00	15.00	RD 10278 30X 32 S355J2C+C	AWN000301
29	955922	BOLZEN B1 16X 22X 6X 15	16.0	22.0	6.00	15.00	RD 10278 30X 32 S355J2C+C	AWN000301

New CAD geometry



Einste... Technische Angaben NB=Beispiel Variante1 BOLZEN B1 16,5X110X 5X100 L...

Bemaßungsansichten:
Bemassung

Darstellungsmodi:



Parts management with CADENAS eCATALOGsolutions – Company standard parts

964994 BOLZEN B1 14,5X110X 5X100

TNR	BEN	D	L	DD	L1	CNSMAT	INFOPDF
Item	Benennung	Durchmess...	Länge [mm]	Durchmess...	Länge [mm]	Werkstoff	Werknorm
1			27.0	4.00	30.00	RD 10278 16X 95 1.4301	AWN000301
2			2.5	4.00	14.25	RD 10278 16X 95 1.4301	AWN000301
3				3.00	21.00	RD 10278 16X 95 1.4301	AWN000301
4				4.00	49.00	RD 10278 16X 95 1.4301	AWN000301
5				4.00	50.00	RD 10278 16X 95 1.4301	AWN000301
6				4.00	42.00	RD 10278 22H9 1.4104	AWN000301
7				4.00	69.00	-	AWN000301
8				5.00	109.50	RD 10278 20X 120 S355J2C+C	AWN000301
9				4.00	41.00	RD 10278 20X 66 S355J2G	AWN000301
10				5.00	100.00	RD 10278 25X117 S355J2C+C	AWN000301
11				4.00	30.00	RD 10278 22H9 1.4104	AWN000301
12				4.00	62.00	RD 10278 22X 74 S355J2C+C	AWN000301
13				4.00	124.00	RD 10278 25X 135 S355J2C+C	AWN000301

Company standards can be opened directly

AMAZONE-WERKNORM
Absteckbolzen – Konstruktionsrichtlinien
AWN 000301
Entw. 20.12.2008, Geändert 09.05.2011, Erweitert durch 000000
Änderung gegenüber der Fassung vom 31.05.2007
1. Bolzenkennzeichnung für sicherheitsrelevante Bauteile
Frühere Ausgaben: 2008-12; 2007-05
Anwendungsbereich: Diese Norm beschreibt Konstruktionsrichtlinien für Absteckbolzen und legt verschiedene Ausführungen, Werkstoff, Oberflächenbeschaffenheit, Qualitätsanforderungen und Sicherungsmöglichkeiten fest. Diese Norm hat keine Gültigkeit für Bolzen nach DIN EN 22340 und DIN EN 22341.
Inhaltsverzeichnis: 1 Definition, 2 Konstruktive Richtlinien, 2.1 Fasen an Absteckbolzen, 2.2 Abgesetzte Bolzen, 3 Axiale Sicherung, 3.1 Querbolzen, 3.1.1 Verpressung, 3.1.2 Werkstoff Querbolzen, 3.1.3 Konstruktive Vorgaben an der Seite des Querbolzens (Ø51816), 3.2 Klapptecker, 3.2.1 Befestigung am eingepressten Bolzen, 3.2.2 Sicherungsschnur kpl. (Ø18366), 3.2.3 Vorgaben an der Seite des Klappteckers, 3.3 Splint, 3.3.1 Bolzen mit Kopf, 3.3.2 Bolzen glatt, 3.4 Schraube und Sicherungsmutter, 3.5 Spannstift.

NB=964994 BOLZEN B1 14,5X110X 5X100 LOD=HI

Parts management with CADENAS eCATALOG solutions – Company standard parts

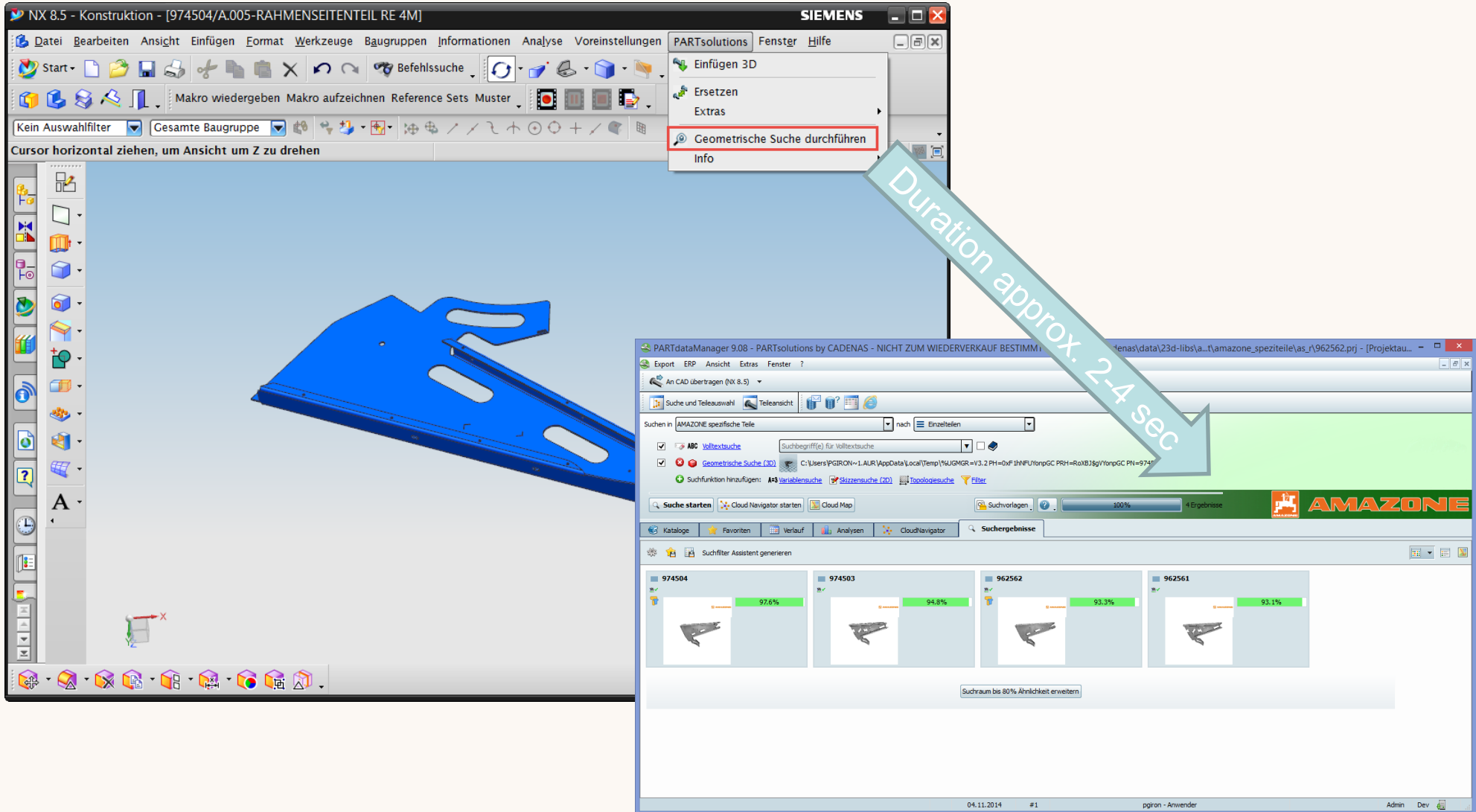
AMAZONE company standards catalogue (eCat)

- Preparing catalogues according to AMAZONE company standards
- Parameterised tables → CAD geometries for new parts can be easily created by inserting a new line and are transmitted to the CAD system.
- Exported in NX, the CAD models contain all the required attributes to be used as fully-fledged NX data.

Geometric similarity search with CADENAS GEOsearch

Geometric similarity search with CADENAS GEOsearch

GEOsearch directly from NX, coupled to the Teamcenter



The image displays two overlapping software windows. The top window is Siemens NX 8.5, showing a 3D model of a blue mechanical part. A context menu is open over the model, with the option 'Geometrische Suche durchführen' highlighted in red. The bottom window is PARTdataManager 9.08, which shows search results for the selected part. The search criteria include 'Volltextsuche' and 'Geometrische Suche (3D)'. The results are displayed as four thumbnails, each with a similarity percentage: 97.6%, 94.8%, 93.3%, and 93.1%. A large blue arrow points from the menu option in the NX window to the search results window, with the text 'Duration approx. 2-4 sec' written inside it.

Duration approx. 2-4 sec

Part ID	Similarity Percentage
974504	97.6%
974503	94.8%
962562	93.3%
962561	93.1%

Suchraum bis 80% Ähnlichkeit erweitern

04.11.2014 #1 pgron - Anwender Admin Dev

Geometric similarity search with CADENAS GEOsearch

PARTdataManager 9.08 - PARTsolutions by CADENAS - NICHT ZUM WIEDERVERKAUF BESTIMMT - \\de0tcs051\cadenas\data\23d-libs\amazone\amazone_speziteile\as_r\962562.prj - [Projektau...]

Export ERP Ansicht Extras Fenster ?

An CAD übertragen (NX 8.5)

Suche und Teileauswahl | Teileansicht



Suchen in AMAZONE spezifische Teile nach Einzelteilen

ABC Volltextsuche Suchbegriff(e) für Volltextsuche

Geometrische Suche (3D) C:\Users\PGIRON~1\AUR\AppData\Local\Temp\%UGMGR=V3.2 PH=0xF1hNFUYonpGC PRH=RoXBJ\$gVYonpGC PN=974504 PRN=A.stl

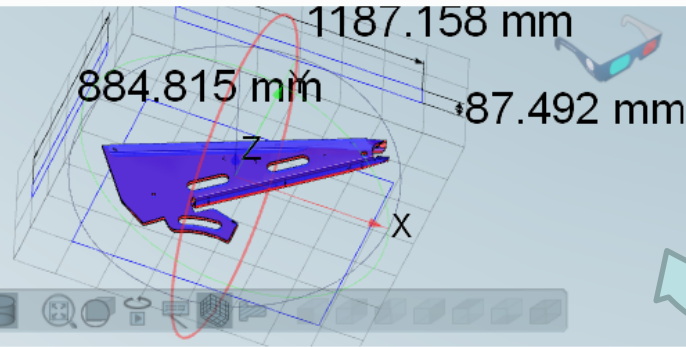
Bauteilvergleich

Tabellarischer Vergleich

Zeichen	Beschreibung	962562	974504
			
		M 1 2	M 1 2
Geometrische Ähnli...		93.3%	97.6%
ERP-Daten			
ERP_PDM_NUMBER	ERP-Number	962562	974504
TC_ITEMID	Teilenummer	962562	974504
TC_ITEMREV	Revision	A.014	A.005
TC_ITEMNAME	Benennung	RAHMENSEITENTEIL_RE...	RAHMENSEITENTEIL RE 4...
TC_ITEMSTATE	Status	-	-
TC_MATERIAL	Werkstoff	-	-

Auswahlzeile für selektierte Projekte

3D-Vergleich



2D-Vergleich

Suchvorlagen 100% 4 Ergebnisse

Suchergebnisse

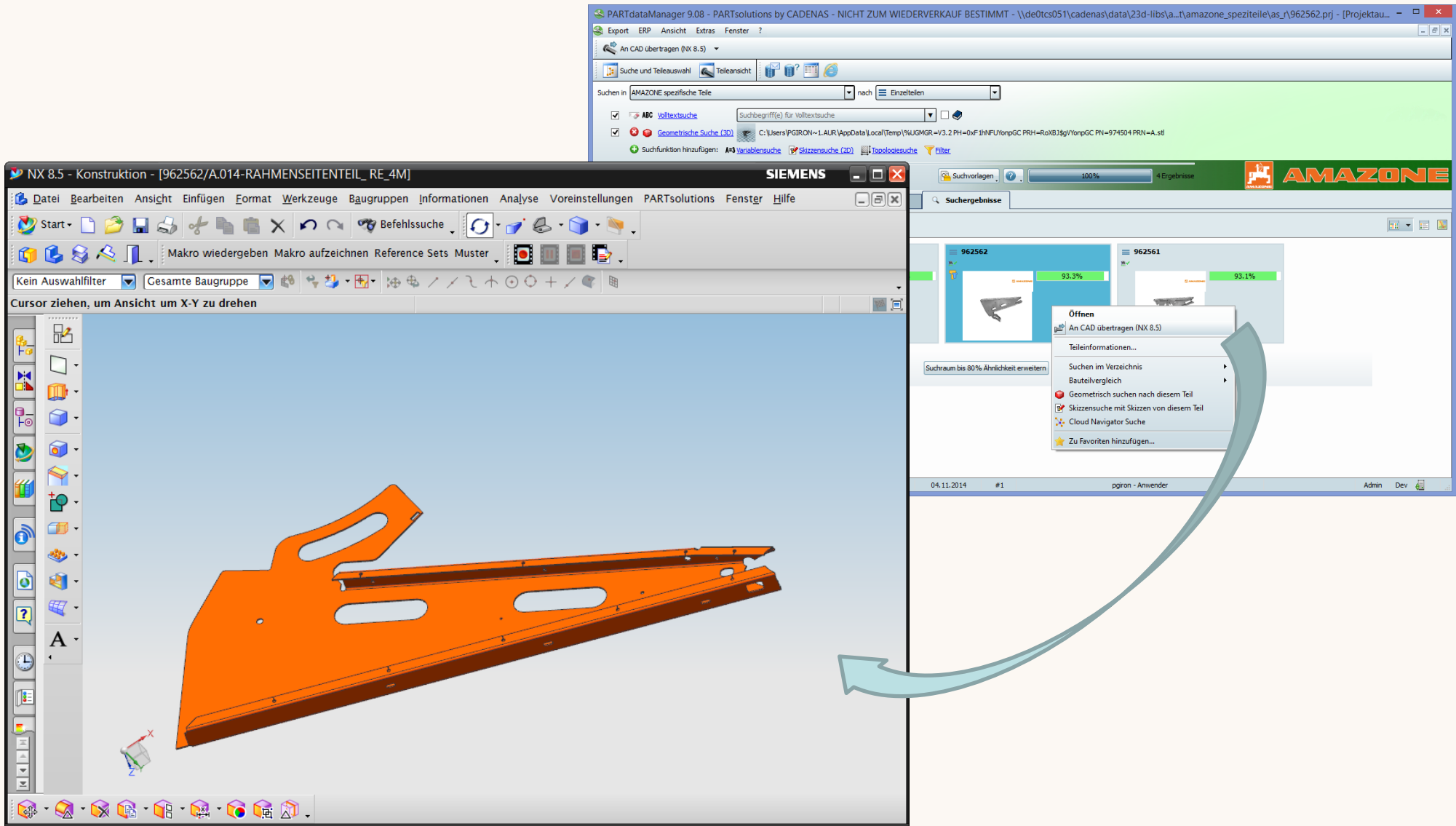
962562 93.3%

962561 93.1%

- Öffnen
- An CAD übertragen (NX 8.5)
- Teileinformationen...
- Suchen im Verzeichnis
- Bauteilvergleich
 - Als 1. Bauteil laden
 - Als 2. Bauteil laden
 - Bauteil hinzufügen
- Geometrisch suchen nach diesem Teil
- Skizzensuche mit Skizzen von diesem Teil
- Cloud Navigator Suche
- Zu Favoriten hinzufügen...

2014 #1 pgiron - Anwender Admin Dev

Geometric similarity search with CADENAS GEOsearch



2D draft search – GEOsearch for non-CAD users

PARTdataManager 9.08 - PARTsolutions by CADENAS - NICHT ZUM WIEDERVERKAUF BESTIMMT - \\de0tcs051\cadenas\data\23d-libs\...t\amazone_speziteile\as_r\962562.prj - [Projektau... -

Export ERP Ansicht Extras Fenster ?

An CAD übertragen (NX 8.5)

Suche und Teileauswahl Teileansicht

Suchen in AMAZONE spezifische Teile nach Einzelteilen

ABC Volltextsuche Geometrische Suche (3D) Suchfunktion hinzufügen: Variablenuche **Skizzenuche (2D)** Topologuesuche Filter

Suchbegriff(e) für Volltextsuche

C:\Users\PGIRON~1.AUR\AppData\Local\Temp\%UGMGR=V3.2.PH=0xF1hNFUYonpGC.PRH=RoXBJ\$gVYonpGC.PN=974504.PRN=A.stl

Suche starten Cloud Navigator starten Cloud Map Suchvorlagen 100% > 50 Ergebnisse

Kataloge Favoriten Verlauf Analysen CloudNavigator Suchergebnisse

Filter: Hersteller

- RAHMENSEITENTEIL LI 3M - 97
- RAHMENSEITENTEIL LI 4M - 96
- RAHMENSEITENTEIL LI 4M - 97
- Rahmenseitenteil li. - 950135
- RAHMENSEITENTEIL LINKS - 95
- RAHMENSEITENTEIL LINKS - 95
- RAHMENSEITENTEIL LINKS FR
- RAHMENSEITENTEIL RE - 2064
- RAHMENSEITENTEIL RE - 8810
- RAHMENSEITENTEIL RE - 8819
- RAHMENSEITENTEIL RE - 9529
- RAHMENSEITENTEIL RE - 9577
- RAHMENSEITENTEIL RE - 9684
- RAHMENSEITENTEIL RE 3M - 9
- RAHMENSEITENTEIL RE 3M - 9
- RAHMENSEITENTEIL RE 4M - 9

RASTENBLECH C-DRILL - 962621

RASTENBLECH D9 - 955963

RASTER - 982941

RASTER - 986530

RASTERUNG F. HANDBREMSE A2G - 993684

RASTPROFIL SCHAUFELKONSOLE TS - 9435

04.11.2014 #1 pgiron - Anwender Admin Dev

Skizzensuche (2D)

Verlauf

		Datum: 2015-01-20 Uhrzeit: 10:59:06
		Datum: 2015-01-20 Uhrzeit: 10:58:39
		Datum: 2015-01-20 Uhrzeit: 10:58:02
		Datum: 2015-01-20 Uhrzeit: 10:57:28
		Datum: 2015-01-20 Uhrzeit: 10:52:11
		Datum: 2015-01-20 Uhrzeit: 10:02:42
		Datum: 2015-01-20 Uhrzeit: 10:00:33

Skizzen

Einstellungen

Suchvorlage: Skizzensuche (schwarz-weiß) Bearbeiten

Übernehmen Übernehmen und Suchen Abbrechen

PART

Export

An

Suc

Suchen in

Filter: Hers

NE

2D draft search – GEOsearch for non-CAD users

PARTdataManager 9.08 - PARTsolutions by CADENAS - NICHT ZUM WIEDERVERKAUF BESTIMMT - \\de0tcs051\cadenas\data\23d-libs\...t\amazone_speziteile\as_r\962562.prj - [Projektau...]

Export ERP Ansicht Extras Fenster ?

An CAD übertragen (NX 8.5)

Suche und Teileauswahl | Teileansicht

Suchen in: AMAZONE spezifische Teile nach Einzelteilen

ABC [Volltextsuche](#)

Geometrische Suche (3D)




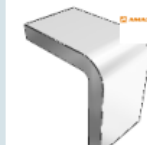




[Skizzenuche \(2D\)](#)

Suchfunktion hinzufügen: [A=3 Variablensuche](#) [Topologuesuche](#) [Filter](#)

[Suche starten](#) [Cloud Navigator starten](#) [Cloud Map](#) [Suchvorlagen](#) 100% > 50 Ergebnisse

Kataloge Favoriten Verlauf Analysen CloudNavigator **Suchergebnisse**

Suchfilter Assistent generieren

<p>140335202110</p>  <p>89.4%</p>	<p>140335102110</p>  <p>89.4%</p>	<p>958152</p>  <p>87.5%</p>	<p>991380</p>  <p>87.0%</p>
<p>972430</p>  <p>86.8%</p>	<p>136001012410</p>  <p>86.4%</p>	<p>205954</p>  <p>86.0%</p>	<p>78700668</p>  <p>85.5%</p>

04.11.2014 #1 pgiron - Anwender Admin Dev

2D draft search – GEOsearch for non-CAD users

PARTdataManager 9.08 - PARTsolutions by CADENAS - NICHT ZUM WIEDERVERKAUF BESTIMMT - \\de0tcs051\cadenas\data\23d-libs\am...t\amazone_speziteile\as_r\962562.prj - [Projektau... -

Export ERP Ansicht Extras Fenster ?

An CAD übertragen (NX 8.5)

Suche und Teileauswahl Teileansicht

Suchen in **AMAZONE spezifische Teile** nach Einzelteilen

ABC Volltextsuche Suchbegriff(e) für Volltextsuche

Geometrische Suche (3D) C:\Users\PGIRON~1.AUR\AppData\Local\Temp\%JGMR=V3.2 PH=0xF 1hNFUYonpGC PRH=RoXBj\$gVYonpGC PN=974504 PRN=A.stl



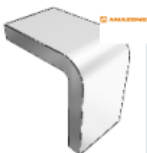



Skizzensuche (2D)

Suchfunktion hinzufügen: **A=3 Variablensuche** Topologiesuche Filter






Suche starten Cloud Navigator starten Cloud Map Suchvorlagen 100% > 50 Ergebnisse

Kataloge Favoriten Verlauf Analysen CloudNavigator Suchergebnisse

Suchfilter Assistent generieren

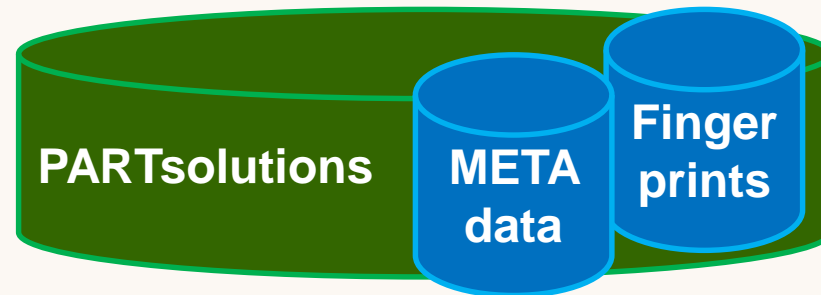
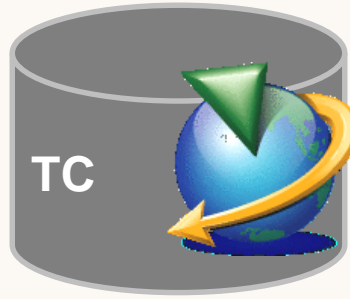
<p>140335202110</p>  <p>89.4%</p>	<p>140335102110</p> 	<p>958152</p>	<p>991380</p>  <p>87.0%</p>
<p>972430</p>  <p>86.8%</p>	<p>136001012410</p> 		<p>78700668</p>  <p>85.5%</p>

Öffnen

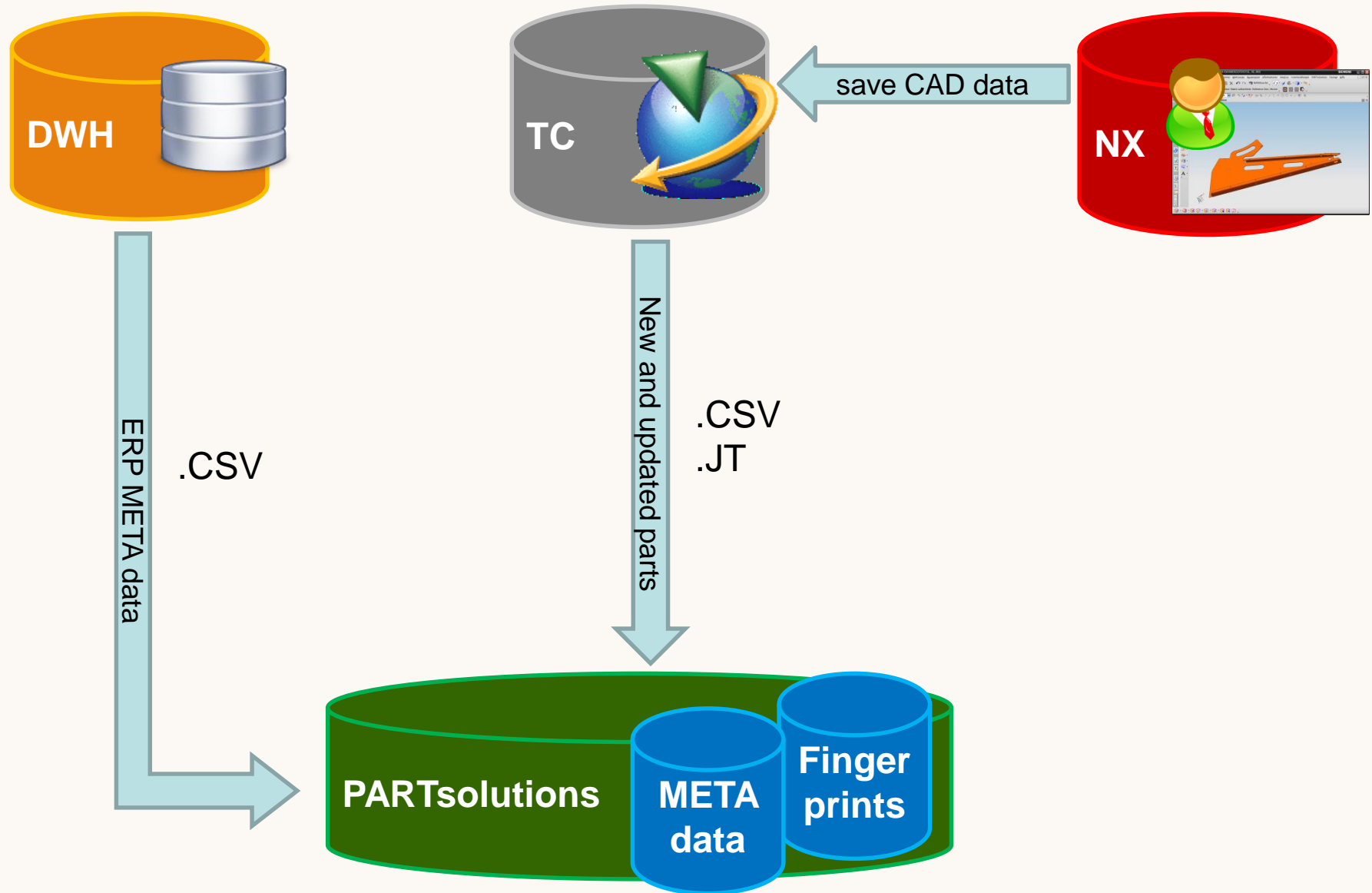
-  An CAD übertragen (NX 8.5)
- Teileinformationen...
- Suchen im Verzeichnis ▶
- Bauteilvergleich ▶
-  Geometrisch suchen nach diesem Teil
-  Skizzensuche mit Skizzen von diesem Teil
-  Cloud Navigator Suche
-  Zu Favoriten hinzufügen...

04.11.2014 #1 pgiron - Anwender Admin Dev

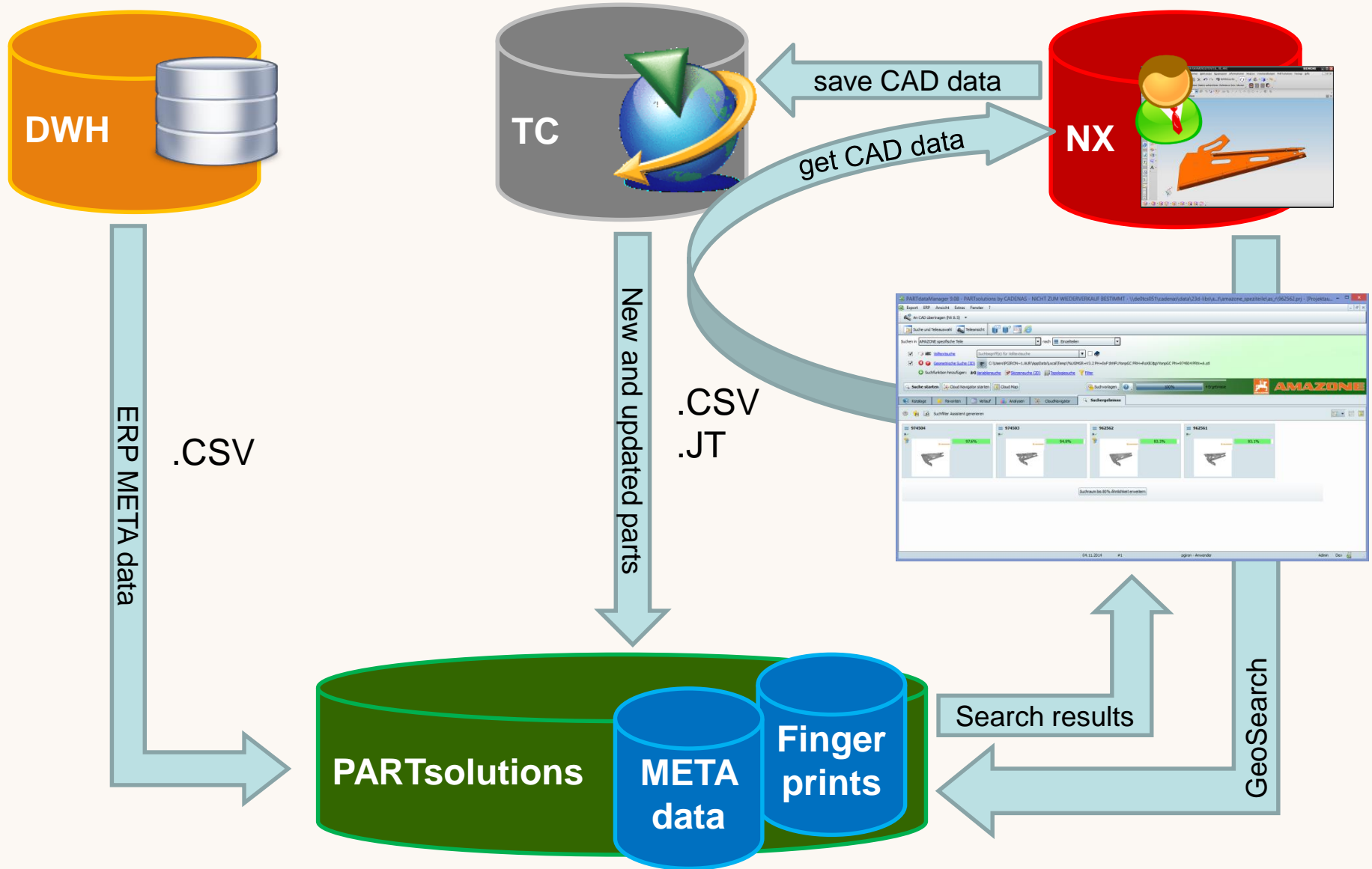
GEOsearch Teamcenter fingerprinting workflow



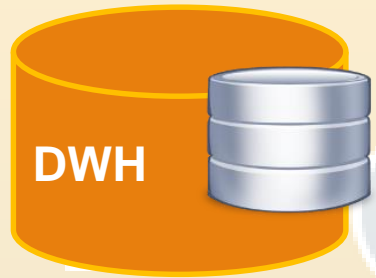
GEOsearch Teamcenter fingerprinting workflow



GEOsearch Teamcenter fingerprinting workflow



GEOsearch Teamcenter fingerprinting workflow



ERP META data

.CSV

PARTsolutions

META data

Finger prints

New and updated parts

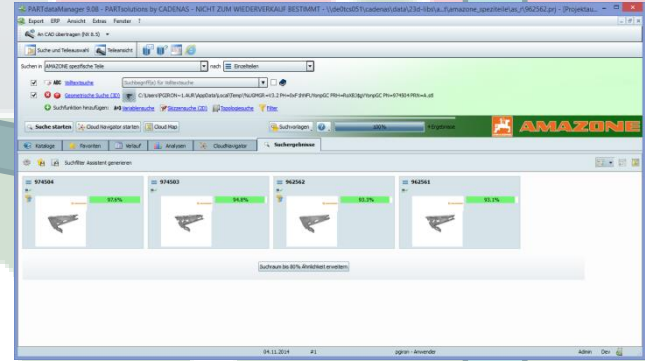
.CSV
.JT

save CAD data

get CAD data

Search results

GeoSearch



The AMAZONE Group

Motivation for the introduction of PARTsolutions

- Initial basis: ERP and part search

- Our requirements and goals

PLM landscape and distributed product development at several locations

- Teamcenter UA Server Network

- Figures and Facts

Project history

Current status

- Parts categories at AMAZONE

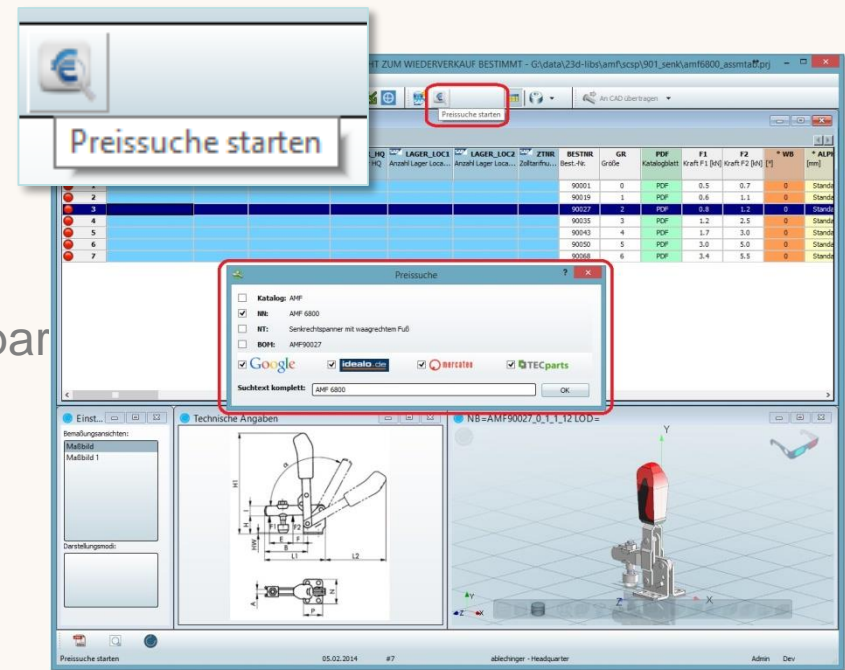
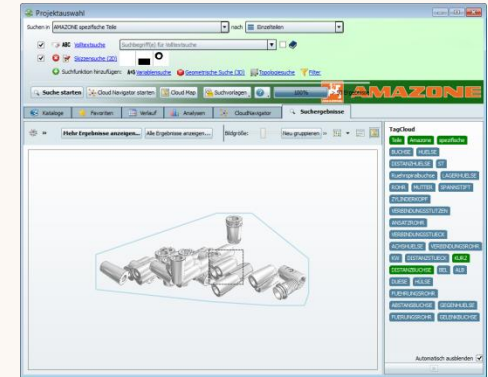
- Parts management with CADENAS PARTsolutions – Folder structure

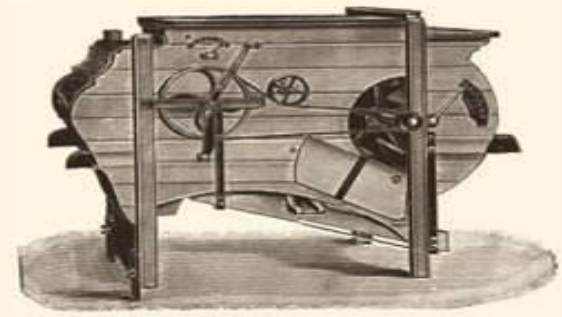
- Parts management with CADENAS eCATALOGsolutions – Company standard parts

- Geometric similarity search with CADENAS GEOsearch

Vision

- Concept for the early GEOsearch similarity search in the development process
 - Use of other tools for:
 - standard terminology
 - cost calculation in the development process
 - supplier identification for new parts
 - market price calculation
 - Inventory data analysis for
 - optimising the current part classification
- Identification of any new company standard part





Many thanks for your kind attention



AMAZONE