

CAViT - Kurzvorstellung

Auswertung von Versuchs- und Simulationsdaten

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- Einordnung / Motivation
- Produktübersicht
- Demo

CAD/Meshing

PreProcessing

Solving

Postprocessing

CAViT (seit 2009)

The screenshot displays the CAViT software interface. On the left, there is a sidebar with a project tree and a scenario list. The main area features a table with columns for Tag, Projekt, Testname, Direktive, Bearbeitungs-Status bzw. release level, and a numerical value. Below the table, a Gantt chart shows a timeline from 28.11.2012 to 24.08.2014, with a task bar for 'Meilenstein 3' and 'Meilenstein 4'.

Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw. release level	
	Project 17	Test 184	FMVSS208	CARRIED_O	324.7
	Project 17	Test 192	FMVSS208	CARRIED_O	
	Project 17	Test 199	FMVSS208	CARRIED_O	587.7
	Project 17	Test 173	FMVSS208	CREATED	337.8
	Project 17	Test 175	FMVSS208	CREATED	
	Project 17	Test 176	FMVSS208	CREATED	479.0
	Project 17	Test 177	FMVSS208	CREATED	352.3
	Project 17	Test 178	FMVSS208	CREATED	420.7
	Project 17	Test 179	FMVSS208	CREATED	316.4
	Project 17	Test 180	FMVSS208	CREATED	
	Project 17	Test 182	FMVSS208	CREATED	
	Project 17	Test 183	FMVSS208	CREATED	494.7
	Project 17	Test 188	FMVSS208	CREATED	414.7
	Project 17	Test 191	FMVSS208	CREATED	

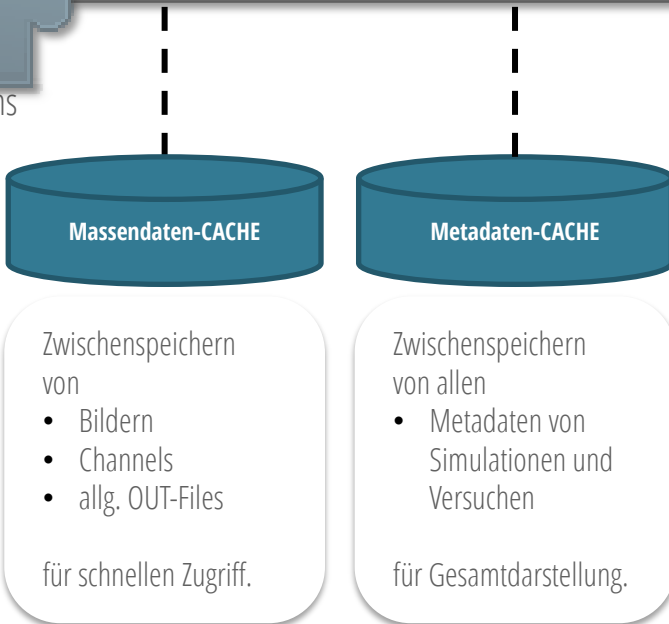
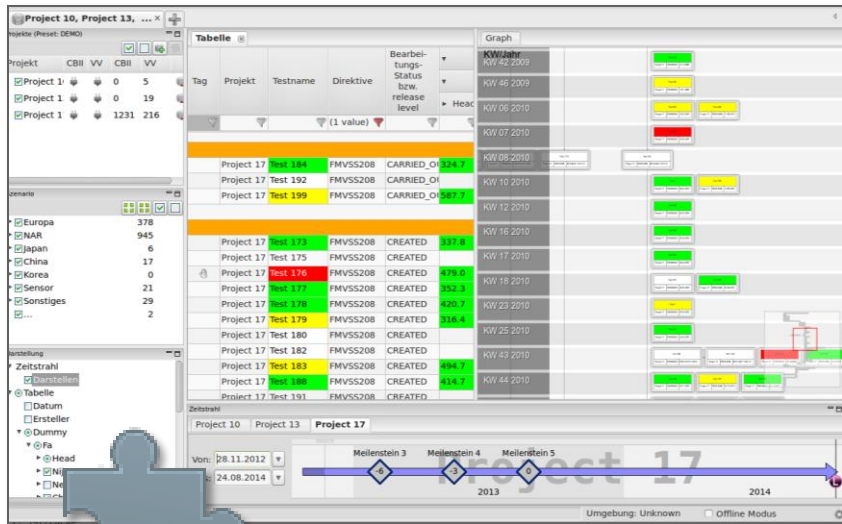
■ Post-Datenmanagement

- Beschaffung und Bereitstellung von Ergebnisdaten aus Simulation und Versuch
- Unterstützung für die Auswertung von Simulations- und Versuchdaten

■ Features

- Übersichtliche Visualisierung des Datenbestandes
- (Vor-)Bewertung von Simulations- und Versuchsergebnissen (szenariobasiert)
- PlugIn-Konzept u.a. für Integration von beliebigen Applikationen (z.B. Animator, Falcon,..) und Prozessen
 - Reporterstellung
 - Prozessautomatisierung

CAViT: Architektur



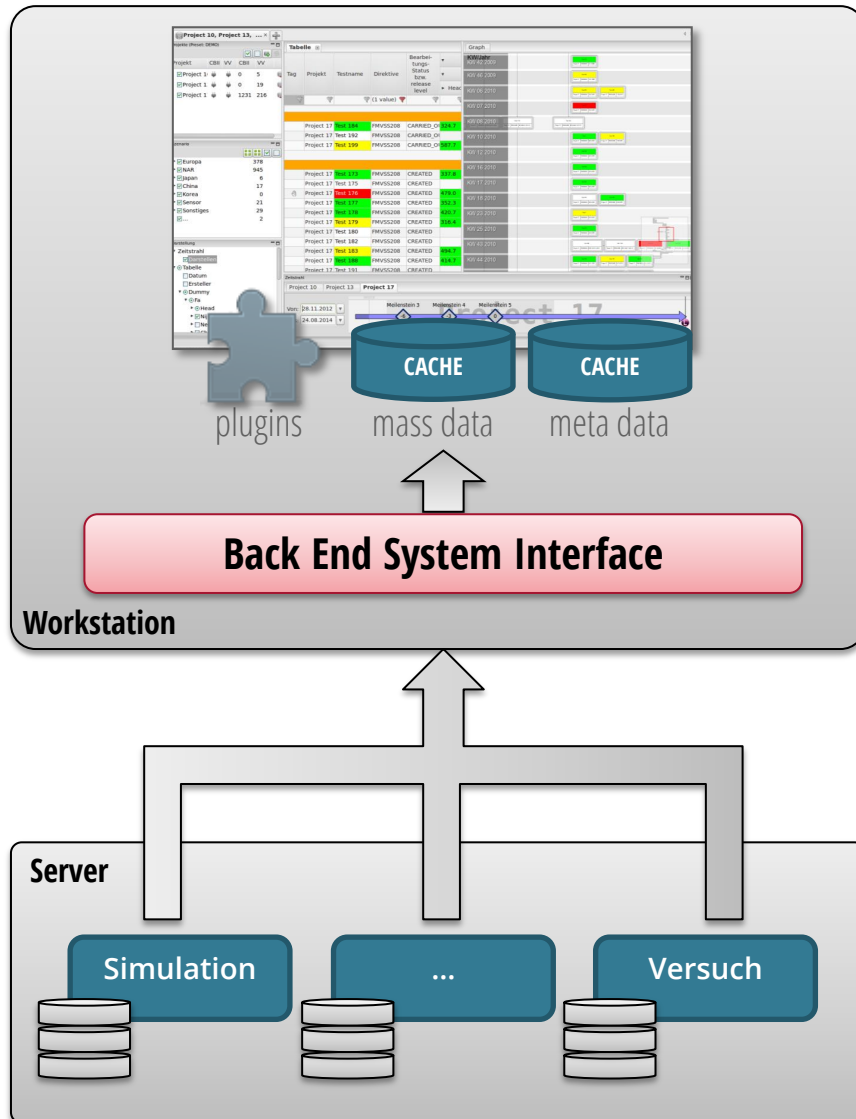
■ Architektur

- RichClient Architektur – Linux/Windows
- Erweiterbar via Plugins / Skripten
 - Nahtlose Integration von proprietären Features und Dritt-Software
 - Schnelle Erweiterbarkeit und Pflege ohne Rücksicht auf Releasezyklus
- Lokales Caching (Performance)
- Anbindung an Status.E (Berichtsfunktionalität, Status-Verfolgung)

■ Datenbereitstellung

- Anbindung an Datenhaltungssystem mittels spezifischen Adaptern
- keine eigene zentrale Datenhaltung

CAViT: Datenbereitstellung



■ Datenbereitstellung

- Datenquellen sind bereits vorhandene Drittsysteme
- Anbindung über Schnittstellen an Drittsysteme (LoCo, CAE-Bench, Visverdi, Falcon, ...)
- keine eigene *zentrale* Datenhaltung für Simulation/Versuch
- keine persistente Duplizierung des Datenbestandes

■ Datenformate

- Herstellen einer einheitlichen Darstellung bei der Datenübernahme via Schnittstellen; ggf. Datenkonvertierung on-the-fly
- ISO-MME Standard wird realisiert; ASAM ODS Datentypen werden unterstützt

CAViT: GUI Overview I

The screenshot displays the CAViT GUI interface, which is divided into several main sections:

- Projects (left sidebar):** A list of projects with columns for 'Projekt', 'CBII', and 'VV'. Three projects are checked, showing values like 0, 5, 19, 1231, and 216.
- Szenario (left sidebar):** A tree view of scenarios including 'Europa' (378), 'NAR' (945), 'Japan' (6), 'China' (17), 'Korea' (0), 'Sensor' (21), 'Sonstiges' (29), and '...' (2).
- Darstellung (left sidebar):** View settings for 'Zeitstrahl' (Timeline) and 'Tabelle' (Table). The 'Tabelle' view is selected, with options for 'Datum', 'Ersteller', and 'Dummy' (Fa, Head, Nij, Neck forces, Chest).
- Table (center):** A data table with columns: Tag, Projekt, Testname, Direktive, Bearbeitungs-Status, and a numerical value. The table shows data for Project 17, including tests 199, 173, 182, 183, and 188.
- Graph (right):** A Gantt chart showing 'KW/Jahr' (Week/Year) from 2009 to 2010. It displays task bars for various tests, color-coded by status (green, yellow, red).
- Timeline (bottom):** A horizontal timeline for 'Meilenstein 4' and 'Meilenstein 5' in 2013 and 2014, with a blue arrow indicating a duration.

Three callout boxes provide additional context:

- Projects:** displayed projects and contextual actions
- Selection / Filter:** scenario based selection of tests and simulations
- View settings:** settings of table, graph and time line

CAViT: GUI Overview II

The screenshot displays the CAViT GUI interface, which is divided into several main sections:

- Project List (Left):** Shows a list of projects with columns for 'Projekt', 'CBII', and 'VV'. Three projects are listed, all with 'VV' values of 0 or 19 or 216.
- Szenario (Left):** A tree view showing categories like 'Europa', 'NAR', 'Japan', 'China', 'Korea', 'Sensor', and 'Sonstiges' with associated counts.
- Darstellung (Left):** A view configuration panel with options for 'Zeitstrahl', 'Darstellen', 'Tabelle', 'Datum', 'Ersteller', 'Dummy', and 'Fa'.
- Table (Center):** A 'Tabellen' view showing a list of tests and simulations. The table has columns for 'Tag', 'Projekt', 'Testname', 'Direktive', and 'Bearbeitungs-Status bzw. release level'. The data is as follows:

Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw. release level
	Project 17	Test 184	FMVSS208	CARRIED_OI 324.7
	Project 17	Test 192	FMVSS208	CARRIED_OI
	Project 17	Test 199	FMVSS208	CARRIED_OI 587.7
	Project 17	Test 173	FMVSS208	CREATED 337.8
	Project 17	Test 175	FMVSS208	CREATED
	Project 17	Test 176		
	Project 17	Test 177		
	Project 17	Test 178		
	Project 17	Test 179		
	Project 17	Test 180		
	Project 17	Test 182		
	Project 17	Test 183		
	Project 17	Test 188	FMVSS208	CREATED 414.7
	Project 17	Test 191	FMVSS208	CRFATED
- Graph (Right):** A 'Graph' view showing a timeline of tests and simulations. The x-axis represents 'KW/Jahr' (Week/Year) from 2009 to 2014. The y-axis represents 'KW' (Week) from 42 to 17. The graph shows various test blocks, some highlighted in green, yellow, or red.
- Zeitstrahl (Bottom):** A Gantt chart for 'Project 17' showing a timeline from 'Von: 28.11.2012' to 'Bis: 24.08.2014'. The chart includes milestones: 'Meilenstein 3' at -6, 'Meilenstein 4' at -3, and 'Meilenstein 5' at 0. The chart is labeled 'neute' and 'Project 17'.

Two callout boxes highlight the 'Graph view of tests and simulations' and the 'Tabular view of tests and simulations'.

CAViT: GUI Overview III

The screenshot displays the CAViT - V2.0 software interface. The main window is titled "CAViT - V2.0" and contains several panels:

- Top Panel:** "Sitzungen" (Sessions) and "Mitteilungs-Konsole" (Message Console).
- Left Panel:** "Seitenschutz (ver. 1.1.9)" (Side Protection) showing a tree view of projects and scenarios. The "Szenario" (Scenario) section is expanded, showing various test configurations like "RdW Gesetz", "EuroNCAP 2014", and "NAR Gesetz".
- Center Panel:** "Tabelle" (Table) showing a grid of simulation data. The table has columns for "Tag" (Tag) and "Variante" (Variant). The data is color-coded (green, yellow, red) to indicate different levels of performance or status.
- Right Panel:** "Eigenschaften" (Properties) showing a list of attributes for the selected test case "Test_5134 (93 Elemente)". The list includes "Isocode", "Name", and "Wert" (Value).

A dark green callout box is overlaid on the table, titled "Property panel" and "Visualization of simulation / test data". It lists the following data types:

- Attributes / Key-Results
- Channels
- Images
- Movies/Solver output files
- Documents
- Measure data

Tag	Variante	Value 1	Value 2	Value 3	Value 4
Test_525					
Test_549					
377					402.6
377					
Test_524					
Test_524					
Test_528					
Test_526					
Test_524					1702.6
Test_5265					
Test_5247		339.4		24.5	873.4
Test_5282					
Test_5264					
377		96.0	1422.1	25.1	562.1
377		182.1		30.1	
Test_5281					
Test_5274					
Test_5250		42.7		19.2	675.3
Test_5251		34.0		1.2	676.8
Test_5270					
Test_5252		429.2	1276.1	1227.0	51.4
Test_5253					
377		23.0	314.8	15.9	261.5

Isocode	Name	Wert
Test_5134 (93 Elemente)		
0.0.00.D.0.GENERAL_...		0
0.0.00.D.0.GENERAL_...	Project	Pro...
0.0.00.D.0.GENERAL_...	Bjo...	Bjo...
0.0.00.D.0.GENERAL_...	Tes...	Tes...
0.0.00.D.0.GENERAL_...	Release...	1
0.0.00.D.0.GENERAL_...	VsimId ...	II2...
0.0.00.D.0.GENERAL_...		23.03
0.0.00.D.0.GENERAL_...		Eur...
0.0.00.D.0.GENERAL_...	Discipline	Occ...
0.0.00.D.0.GENERAL_...		871
0.0.00.D.0.GENERAL_...		262
0.0.00.D.0.GENERAL_...		258
0.0.00.D.0.GENERAL_...		Bjo...
0.0.00.D.0.GENERAL_...		sas
0.0.00.D.0.GENERAL_...		256
0.0.00.D.0.GENERAL_...		Upd...
0.0.00.D.0.GENERAL_...		AU6...
0.0.00.D.0.GENERAL_...		0
0.0.00.D.0.GENERAL_...	Descrip...	Typ...
0.0.00.D.0.GENERAL_...	links	
0.0.00.D.0.GENERAL_...	Seite	
0.0.00.D.0.GENERAL_...	Bar...	
0.0.00.D.0.GENERAL_...		377
0.0.00.R.0.GENERAL_...		23.03
1.0.00.D.0.GENERAL_...		AU127
1.0.00.D.0.VEHICLE_...	PVS	
1.0.00.D.0.VEHICLE_...	LL	
1.0.00.D.0.VEHICLE_...		

CAViT: GUI Overview IV

The screenshot displays the CAViT GUI interface. On the left, there are panels for 'Bauteil-Airbag-Front (ver. ...)', 'Szenario', and 'Tabelle'. The main area shows a 'Status-Graph' with a hierarchical tree structure. The root node is 'Standversuch' (green), which branches into 'DAB' (yellow) and 'CoP' (yellow). 'DAB' further branches into 'RT' (grey) and 'LT' (green). 'CoP' branches into 'HF_Pos1' (grey) and 'HF_Pos2' (yellow). Each of these nodes is connected to a vertical stack of icons representing test cases. A green box highlights the 'LT' node and its associated test cases. At the bottom, a 'Time line' shows milestones from 2012 to 2015, including '1.VKF', '2.VKF', 'VPT', 'P-frei', 'B-frei', 'Vorserie', and 'SOP'. A blue arrow indicates the progression of the development plan.

Status
status definition on discipline / loadcase level

- assignment of assessed tests to test cases (status leaf nodes)
- Status propagation to top node
- report status to external project monitoring/management systems (Status.E)

Time line
milestones of the product development plan

Live Demo

CAViT: Tabular view

Tabelle					Dummy								
Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw. release level	Fa				Bf				
			(1 value)		Head	Nij	Chest	Femur forces	Head	Nij	Neck forces	Chest	Femur f
Project 17	Test 169	FMVSS208	RESULTS_LIS	341.3									
Project 17	Test 170	FMVSS208	RESULTS_LIS	265.5									
Project 17	Test 181	FMVSS208	RESULTS_LIS	488.0									
Project 17	Test 185	FMVSS208	RESULTS_LIS	368.3									
Project 17	Test 186	FMVSS208	RESULTS_LIS	376.8									
Project 17	Test 187	FMVSS208	RESULTS_LIS	461.0									
Project 17	Test 190	FMVSS208	RESULTS_LIS	414.9									
Project 17	Test 195	FMVSS208	RESULTS_LIS	421.8									
Project 17	Test 196	FMVSS208	RESULTS_LIS	357.9									
Project 17	Test 197	FMVSS208	RESULTS_LIS	275.2									
Project 17	Test 200	FMVSS208	RESULTS_LIS	581.2									
Project 17	Test 202	FMVSS208	RESULTS_LIS										
Project 17	Test 206	FMVSS208	RESULTS_LIS	407.1									
Project 17	Test 208	FMVSS208	RESULTS_LIS	333.9									
Project 17	Test 213	FMVSS208	RESULTS_LIS	388.0									
Project 17	Test 0	FMVSS208	SCHEDULED	318.1	0.657	177.2	-842.122	243.1	0.201	342.251	177.2	-1023.332	
Project 17	Test 168	FMVSS208	SCHEDULED	191.8	0.216	199.4	-3410.745	274.7	0.313	1095.316	212.1	-2788.526	
Project 17	Test 171	FMVSS208	SCHEDULED	344.4	0.853	415.5	-3296.156	453.1	0.221	667.155	420.6	-1767.151	
Project 17	Test 172	FMVSS208	SCHEDULED										

Filter

Filter für Direktive

Enthält Zeichenkette:

Erfüllt Bedingung:

Ausgewählte Werte:

Werteliste für Direktive ▲

- EuroNCAP
- FMVSS 208
- FMVSS 301
- FMVSS208
- IIHS
- LKW-Unterfahrt
- Sensor

rows: tests & simulations

columns / subcolumns: test data / key results

CAViT: Tabular view

Tabelle													
Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw. release level	Dummy								
					Fa				Bf				
					Head	Nij	Chest	Femur forces	Head	Nij	Neck forces	Chest	Femur f
			(1 value)										
Project 17	Test 169	FMVSS208	RESULTS_LI	341.3	0.358	225.9	-136.398	159.5	0.088	368.672	132.0	-146.225	
Project 17	Test 170	FMVSS208	RESULTS_LI	265.5	0.259	199.6	-3663.381	298.4	0.209				
Project 17	Test 181	FMV			0.374	418.8	-1570.725	401.3	0.511				
Project 17	Test 185	FMV			0.404	385.7	-5123.01	395.5	0.478				
Project 17	Test 186	FMV			0.965	383.3	-3676.409	448.3	0.232				
Project 17	Test 187	FMV			0.336	414.8	-2070.42	519.7	0.254				
Project 17	Test 190	FMVSS208	RESULTS_LI	414.9	0.313	401.7	-2057.361	409.2	0.233				
Project 17	Test 195	FMVSS208	RESULTS_LI	421.8	0.387	452.0	-2920.323	521.9	0.197				
Project 17	Test 196	FMVSS208	RESULTS_LI	357.9	0.594	352.3	-3852.632	471.2	0.315				
Project 17	Test 197	FMV			0.527	349.9	-3654.675	417.0	0.424				
Project 17	Test 200	FMV			0.413	497.8	-2875.21	720.7	0.362	1362.665	570.5	-3030.944	
Project 17	Test 202	FMV											
Project 17	Test 206	FMV			0.544	450.1	-6005.892	394.5	0.263	1342.658	495.0	-5791.279	
Project 17	Test 208	FMV			0.299	373.4	-1701.184	379.9	0.199	564.18	353.3	-1666.115	
Project 17	Test 213	FMVSS208	RESULTS_LI	388.0	0.338	380.0	-1898.346	440.2	0.21	715.672	356.8	-1834.536	
Project 17	Test 0	FMVSS208	SCHEDULED	318.1	0.657	177.2	-842.122	243.1	0.201	342.251	177.2	-1023.332	
Project 17	Test 168	FMVSS208	SCHEDULED	191.8	0.216	199.4	-3410.745	274.7	0.313	1095.316	212.1	-2788.526	
Project 17	Test 171	FMVSS208	SCHEDULED	344.4	0.853	415.5	-3296.156	453.1	0.221	667.155	420.6	-1767.151	
Project 17	Test 172	FMVSS208	SCHEDULED	651.7	0.303	454.3	-3201.094	497.9	0.246	919.118	412.5	-2399.386	

manual rating

suggested rating (aggregated)

automated rating of key results of tests and simulations based on defined scenarios

CAViT: Tabular view

Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw.	Fa			
					Head	Nij	Chest	Femur forces
Project 17	Test 181	FMVSS208	RESULTS_LIS	488.0	0.374	118.8	-1570.725	
Project 17	Test 185	FMVSS208	RESULTS_LIS	368.3	0.404	185.7	-5123.01	
Project 17	Test 186	FMVSS208	RESULTS_LIS	376.8	0.965	183.3	-3676.409	
Project 17	Test 187	FMVSS208	RESULTS_LIS	461.0	0.336	114.8	-2070.42	
Project 17	Test 190	FMVSS208	RESULTS_LIS	414.9	0.313	101.7	-2057.361	
Project 17	Test 195	FMVSS208	RESULTS_LIS	421.8	0.387	152.0	-2920.323	
Project 17	Test 196	FMVSS208	RESULTS_LIS	357.9	0.594	152.3	-3852.632	
Project 17	Test 197	FMVSS208	RESULTS_LIS	275.2	0.527	349.9	-3654.675	
Project 17	Test 200	FMVSS208	RESULTS_LIS	581.2	0.413	497.8	-2875.21	
Project 17	Test 202	FMVSS208	RESULTS_LIS					
Project 17	Test 206	FMVSS208	RESULTS_LIS	407.1	0.544	450.1	-6005.892	
Project 17	Test 208	FMVSS208	RESULTS_LIS	333.9	0.299	373.4	-1701.184	
Project 17	Test 213	FMVSS208	RESULTS_LIS	388.0	0.338	380.0	-1998.346	
Project 17	Test 0	FMVSS208	SCHEDULED	318.1	0.657	177.2	-842.122	
Project 17	Test 168	FMVSS208	SCHEDULED	191.8	0.216	199.4	-3410.745	
Project 17	Test 171	FMVSS208	SCHEDULED	344.4	0.853	415.5	-3296.156	
Project 17	Test 172	FMVSS208	SCHEDULED	651.7	0.303	454.3	-3201.094	

value and rating aggregation

expanded view

Nij			
Nij CE	Nij CF	Nij TE	Nij TF
0.065	0.001	0.358	0.191
0.033	0.066	0.208	0.259
0.296	0.008	0.359	0.374
0.028	0.083	0.404	0.313
0.818	0.131	0.965	0.129
0.085	0.074	0.149	0.336
0.062	0.003	0.213	0.313
0.005	0.081	0.238	0.387
0.252	0.110	0.594	0.133
0.000	0.130	0.527	0.133

CAViT: Tabular view

Tabelle [X]

Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw. release level	Dummy	
			(1 value)		Fa	Bf
	Project 17	Test 169	FMVSS208	RESUL		
	Project 17	Test 170	FMVSS208	RESUL		
	Project 17	Test 181	FMVSS208	RESUL		
	Project 17	Test 185	FMVSS208	RESUL		
	Project 17	Test 187	FMVSS208	RESUL		
	Project 17	Test 190	FMVSS208	RESUL		
	Project 17	Test 195	FMVSS208	RESUL		
	Project 17	Test 196	FMVSS208	RESUL		
	Project 17	Test 197	FMVSS208	RESUL		
	Project 17	Test 200	FMVSS208	RESUL		
	Project 17	Test 202	FMVSS208	RESUL		
	Project 17	Test 206	FMVSS208	RESUL		
	Project 17	Test 208	FMVSS208	RESUL		
	Project 17	Test 213	FMVSS208	RESUL		
	Project 17	Test 0	FMVSS208	SCHED		
	Project 17	Test 168	FMVSS208	SCHED		
	Project 17	Test 171	FMVSS208	SCHED		
	Project 17	Test 172	FMVSS208	SCHED		

manual rating of tests and simulations

Farbbewertung (Weiß setzt zurück)

Kommentar

Bewertung manuell grün, da rote Bewertung aus dem Fehler eines Messaufnehmers [11CHSTHFHMCXC] resultiert

Abbrechen OK

CAViT: Graph view

The screenshot displays the CAViT Graph view interface. On the left, there is a sidebar with a 'Szenario' (Scenario) list and a 'Darstellung' (Representation) tree. The main area shows a hierarchical graph of simulation tests, with nodes containing details like 'Project 17', 'FMVSS208', and timestamps. The graph is organized into quarters (KW) for the year 2009. Four callout boxes provide additional information:

- rank e.g. time**: Points to the 'KW/Jahr' header in the top table.
- relations: parent / child**: Points to the arrows connecting parent test nodes to their child nodes.
- simulation / test with details**: Points to a detailed test node (Test 1285).
- graph overview**: Points to a small overview graph in the bottom right corner.

Szenario

Europa	378
NAR	945
Japan	6
China	17
Korea	0
Sensor	21
Sonstiges	29
...	2

Darstellung

- Zeitstrahl
 - Darstellen
- Tabelle
 - Datum
 - Ersteller
- Dummy
 - Fa
 - Head
 - Nij
 - Neck forces
 - Chest

Table Headers: KW/Jahr, Project 17, FMVSS208, [Timestamp]

Test Nodes: Test 602, Test 1152, Test 1239, Test 1282, Test 1285, Test 958, Test 1313, Test 1409, Test 186

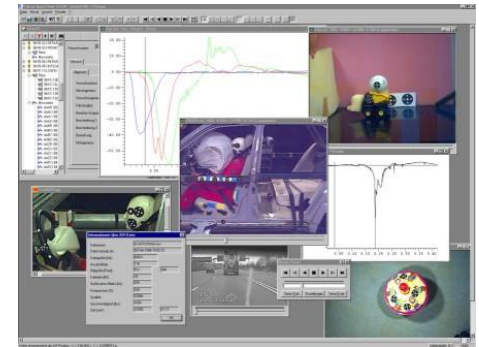
Bottom Bar: Umgebung: Unknown Offline Modus

CAViT: Plugin / Scripting Interface

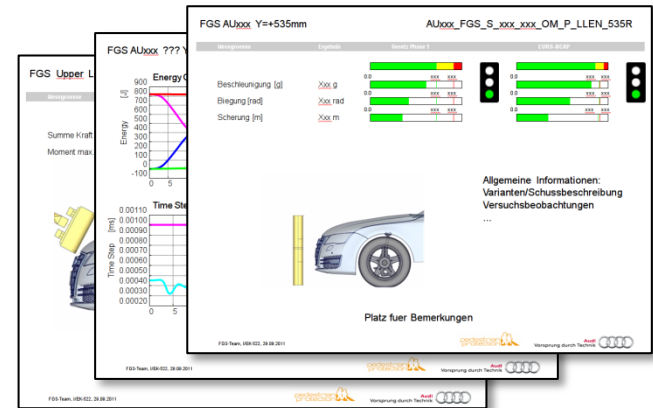
Tag	Projekt	Testname	Direktive	Bearbeitungs-Status bzw. release level	Head	Nij	Ches
			(1 value)				
	Project 17	Test 169	FMVSS208	RESULTS_LIS	341.3	0.358	225.9
	Project 17	Test 170	FMVSS208	RESULTS_LIS	265.5	0.259	199.6
	Project 17	Test 181	FMVSS208	RESULTS_LIS	488.0	0.374	418.8
	Project 17	Test 185	FMVSS208	RESULTS_LIS	368.3	0.404	385.7

Werkzeuge...	Metadaten anzeigen...
Kennzeichnen als...	
Bewerten...	Front Report (ver 0.8.13, global)
Dokumentenablage	
zur Arbeitsmappe...	
Suchen	Werkzeuge neu laden

[visual compare in viewer]



[PDF/PPTs reports]



- integration of post processors, third party tools
- report generation
- plugin concept for scripts; python (interpreter is built in) or any other script language may be used

CAViT: Summary



Integration of CAT and CAE post data

tabular and graph view on both data sets

views, rating scheme, categorization can be configured in any almost any detail



Assisted Assessment of Tests and Simulation

scenario based rating of individual key results and rating recommendation of the test / simulation



Plugin Interface – Reporting & Process automatization

integration of third party tools, generation of reports or processes

automation of any kind



Versioning & Offline Work

user generated data are assigned to a particular point in time, can be tracked, held for archiving purposes and are available offline



Status

supports status definition on discipline / loadcase level

status report interface to Status.E

Vielen Dank!

SCALE 