

AluMag®

Europe ■ India ■ Americas ■ Asia

THE MARKET DEVELOPER

AluMag® makes you successful – worldwide!

● AluMag® Worldwide



Market Research

- Tailored Customer Databases about Foundries, Tool Makers, Extrusion Consumers , ...
- Automotive Application, Material & Process Analyses
- Industrial Application Research
- Lightweight Technology Outlook in Aluminum, Carbon, Composites & Magnesium
- M&A Target Research



Market Development

- Analysis & Development of Market Opportunities
- Accelerate Market Penetration
- Manage New Product Launches
- Establish a Sales Force
- Sales on Demand
- Access & Build-up new Markets in Automotive, Truck/Tractor, Trailer, Bus, Rail, O&G, GE, ...



Roadshows / Events

- Organization of Technical & Commercial Roadshows & Events Globally
- Host In-House Events & Presentation Globally
- Common Technology Booth at Leading Exhibitions
- Supply-Chain Automotive Lightweight Symposium [SCALS] in EUROPE, ASIA & N.AMERICA



Strategic Localization

- Warehousing & Distribution Service
- Supplier & Tie-up Localization
- Identification & Trade-off of new Technology
- Foreign Market Business Cases and their Realization
- Green & Brown Field Localization, from Site Selection to Foundation & Ramp-up

AluMag is “The Market Developer” that successfully penetrates new markets, creates business and localize leading supplier for your company. AluMag access any promising markets and open doors for your business - regardless of region, market, application, material, process or product AluMag makes you successful – worldwide!

MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

With the four business units, AluMag is highly capable to support any company in its quest to enter new markets or segments, no matter its current position in the market.

- Market Research
- Market Development
- Road shows / Events
- Strategic Localization

Starting with an initial analysis to test market potential we will arrange Roadshows and events to showcase our client`s products, proceeding with sales and acquisition support, and finally the buildup of a supply chain abroad.

With the AluMag expertise and support, you are in good hands. AluMag has extensive knowledge and contacts as well as excellent references!

AluMag® makes you successful – worldwide!

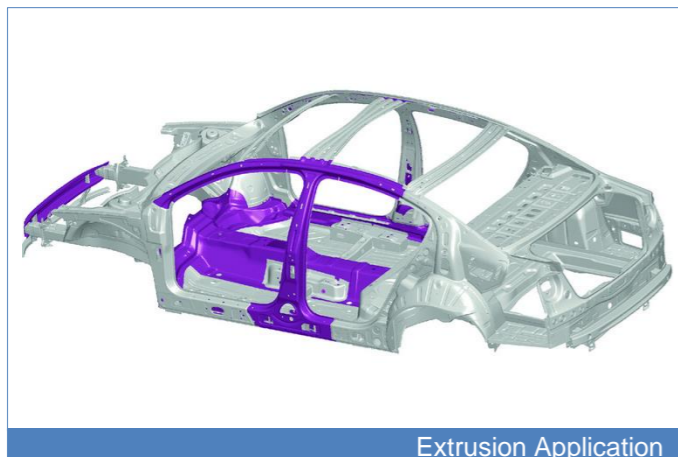
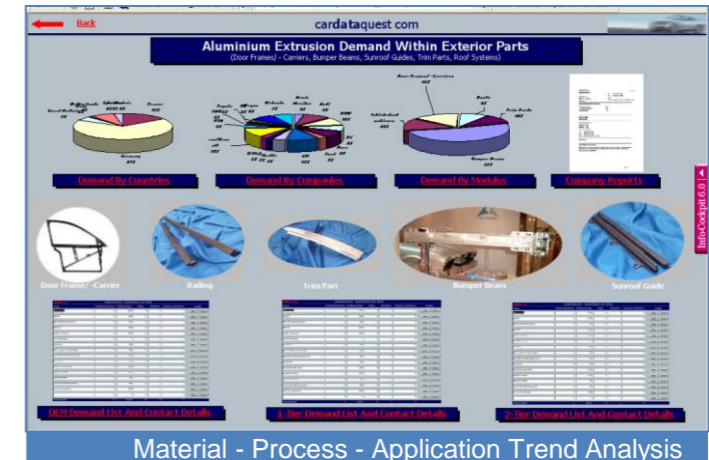


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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

To perform in the business and reach or maintain a leading position over your competition, it is essential to know your market and plan ahead.

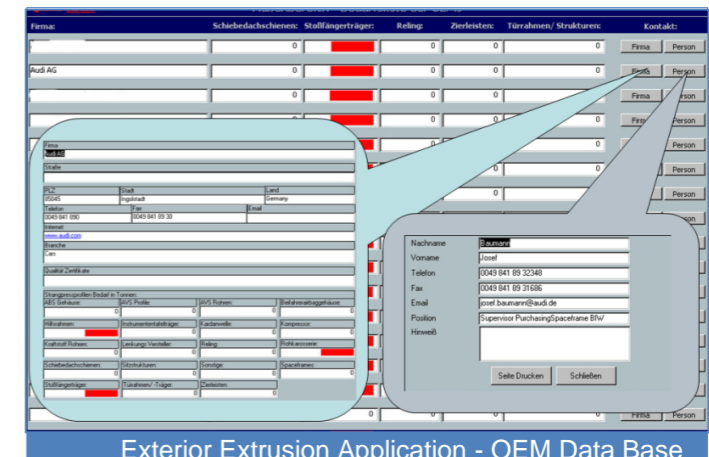
As your provider of automotive research and forecasting studies, AluMag offer you and your business, the market intelligence you need to realize the best strategic decisions and makes you successful - worldwide!



Extrusion Application

Main Activities

- European automotive production forecasting
- Automotive application, materials & process analyses
- Industrial application research
- Supplier and customer databases



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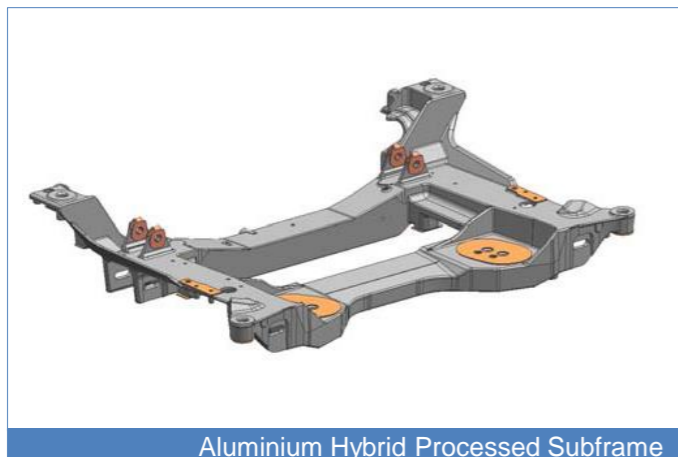
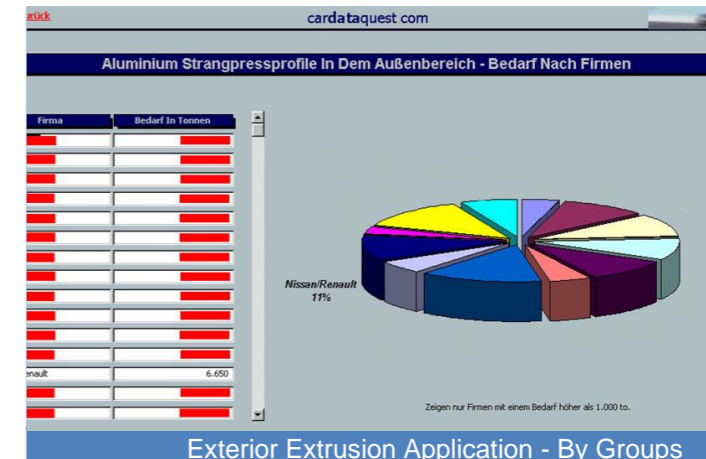
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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

Since 1994, AluMag® maintains and executes single (exclusive) and multi client studies for component and system suppliers.

We have more than 150 automotive suppliers as references. AluMag® operates mainly in Europe, North and South America, India, South Korea, China and Japan – giving us the ability to perform worldwide analyses of high quality for our customers.

In the course of our daily research AluMag® is in steady contact with OEMs, suppliers and consultants all over the world. A strong research in international online and offline media confirm the convincing quality of the AluMag® market research.



Aluminium Hybrid Processed Subframe

Your Benefits

- Learn about your potential clients
- Obtain an inside view of the market
- Identify opportunities and threats
- Minimize risk and optimize profits
- Position your company successfully

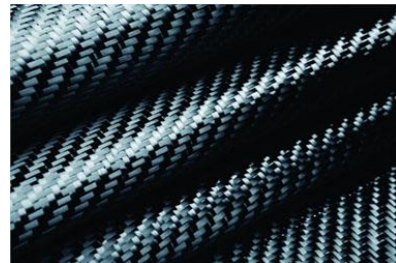


AUDI Arne Lakeit and Dr. Klaus Koglin

Automotive Application Database

Detailed automotive application information by car body variants (Supplier – Material – Process - Weight)

Material Focus:



Carbon / Composites



Aluminium



Magnesium



Steel

Application Focus Areas:

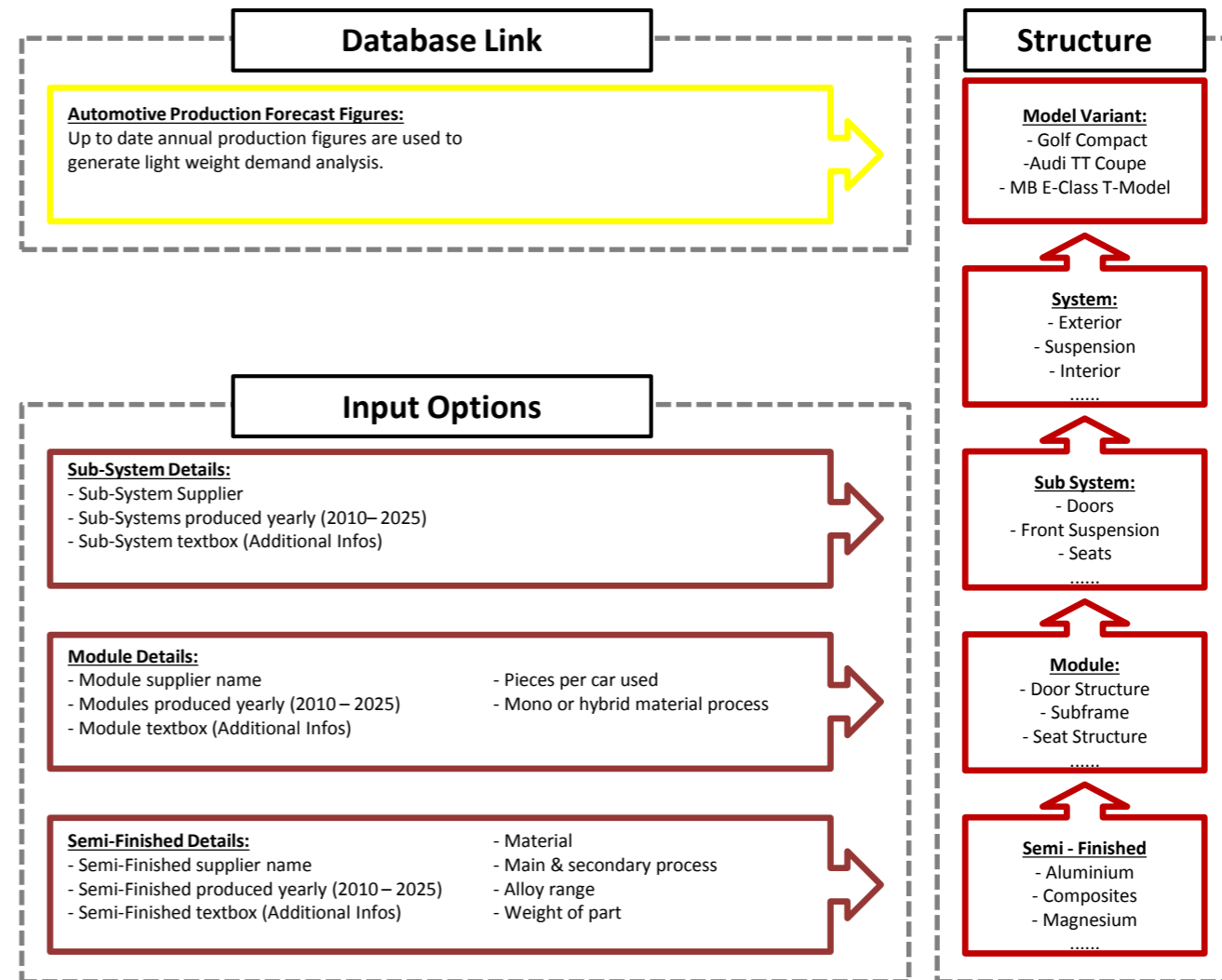
- **Exterior:** Hood & bonnet, lid & tailgate, roof railing, door inner & outer structures, bumper beams, sunroofs ...
- **Suspension / Steering / Braking:** Suspension link-arms, knuckles/wheel carrier, sub frames/cradles/cross members, calipers,
- **BIW:** Front & rear longitudinal carriers, suspension domes, A- / B- / C- pillars, cross members, ...
- **Interior:** Instrument panel beam / cross car beams, passenger airbag housing, cargo management systems, seat structures...
- **Power train:** (Limited focus)

Automotive Application Database

The Automotive Application Database is connected with AluMag in-house automotive production forecast. Accurate material demand analyses by model variant are generated by multiplying an application weight with yearly model variant production.

The direct connection with our automotive production forecast makes it possible to generate several data enquires:

- Demand by material [aluminum, magnesium, steel, composite, carbon]
- Demand by core processes [cast, extruded, rolled, forged, ...]
- Demand by OEM
- Supplier market shares
- Demand by application



Automotive Application Database – MB C-Class W205 Limousine Sub-System Analysis

OPEN MENU PICK A BODYVARIANT: MB C-CLASS / W205 - W205 / MRA - SEDAN/ LIMOUSINE - LIMOUSINE

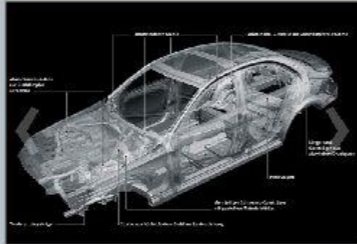
SUB-SYSTEM INFORMATION

SYSTEM: Body In White

SUBSYSTEM: Body in white - Main Frame / Space Frame

SUBSYSTEM TYPE: No Select - No Select

SUBSYSTEM SUPPLIER: MB INHOUSE

SUBSYSTEM PICTURE: 

SUBSYSTEM MEMO:
 Dec 2015: The GLC also has aluminium suspension domes in the front.
 Source: mercedes.
 Nov 2013: The MB C-Class W205 consist of 48 percent aluminium (Cast and Sheet).
 9 parts are made out of aluminium cast.
 Spring strut domes, longitudinal and crossmebers are some of the parts in cast.
 Nov 2011: All Daimler cast Aluminium Structure parts will

ALREADY EXISTING SYSTEMS FOR THIS BODYVARIANT:

SYSTEM	SUBSYSTEM	MODULE
Axles	Rear Axle	Rear Axle / Wheel- Hubs / -
Axles	Rear Axle	Rear Axle / Wheel- Hubs / -
Axles	Rear Axle	Rear Axle / Wishbones/ Link
Body In White	Main Frame / Space Frame	Cross Member
Body In White	Main Frame / Space Frame	Cross Member
Body In White	Main Frame / Space Frame	Frame / Other Parts
Body In White	Main Frame / Space Frame	Front Suspension Domes
Body In White	Main Frame / Space Frame	Front Suspension Domes

SELECT BODY VARIANTS

- MB C-CLASS - W205 - CABRIOLET - W205 / MRA - C-CLASS CABRIOLET
- MB C-CLASS - W205 - COUPE - W205 / MRA - C-CLASS COUPE
- MB C-CLASS - W205 - VAN - W205 / MRA - CLR
- MB C-CLASS - W205 - SEDAN/ LIMOUSINE - W205 / MRA - LIMOUSINE
- MB C-CLASS - W205 - SUV - W205 / MRA - GLC COUPE
- MB C-CLASS - W205 - STATION - W205 / MRA - T-MODEL
- MB C-CLASS - W205 - SUV - W205 / MRA - GLC

SUBSYSTEM PENETRATION:

YEAR	PEN	TOTAL	UNITS
2010	100,00%		
2011	100,00%		
2012	100,00%		
2013	100,00%		
2014	100,00%	261.284	261.284
2015	100,00%	354.510	354.510
2016	100,00%	377.784	377.784
2017	100,00%	385.339	385.339
2018	100,00%	377.632	377.632
2019	100,00%	370.080	370.080
2020	100,00%	362.679	362.679
2021	100,00%	156.271	156.271
2022	100,00%		
2023	100,00%		
2024	100,00%		
2025	100,00%		

MB C-Class W205 Limousine front suspension domes analysis on next page

Light weight applications (modules) inserted for the MB C-Class W205 Limousine.

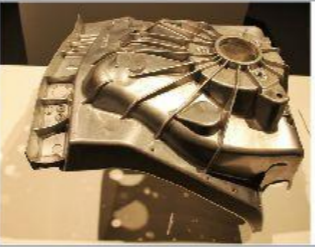
Yearly production in units of the MB C-Class W205 Limousine

Body variants allocated to the inserted application

Automotive Application Database – MB C-Class W205 Limousine Module Analysis

MB C-Class W205
 Limousine front
 suspension domes

MODULE INFORMATION

MODULE:	MODULE PICTURE:	MODULE MEMO:
Main Frame / Space Frame - Front Suspension Domes Module TYPE: No Select - No Select STATUS: Series PARTS: 2 MATERIAL HYBRID: PROCESS HYBRID: MODULE SUPPLIER: NEMAK SUB MODULE SUPPLIER: INPUT SUB MODULE SUPPLIER		Oct 2014: NEMAK is going to be the 3rd MB C-Class Suspension dome supplier in Germany, beside DGS and MB inhouse. NEMAK is waitig for their MB approval Source: NEMAK April 2012. Brabant will supply the NG of the C, E & S-class with suspension domes. Source: Supplier sources. June 2010: The front suspension domes for the MB C-Class B205 will be supplied by Brabant in alu cast.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PENETRATION - %	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%

SEMI-FINISHED PART INFORMATION

MATERIAL:	Aluminium	ALLOY RANGE:	Al-Casting	Confirmed weight!												
MAIN PROCESS:	Aluminium / AL Casting	WEIGHT:	3,16	2010	2011	2012	2013	2014	2015	2016	2017	2018				
SECOND PROCESS:	AL Casting / HPDC	SUPPLIER:	NEMAK	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
MATERIAL:		ALLOY RANGE:														
MAIN PROCESS:		WEIGHT:	0,00	2010	2011	2012	2013	2014	2015	2016	2017	2018				
SECOND PROCESS:		SUPPLIER:	OTHERS OR N/K	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%

Supplier (Nemak)
 share of total C-Class
 Production

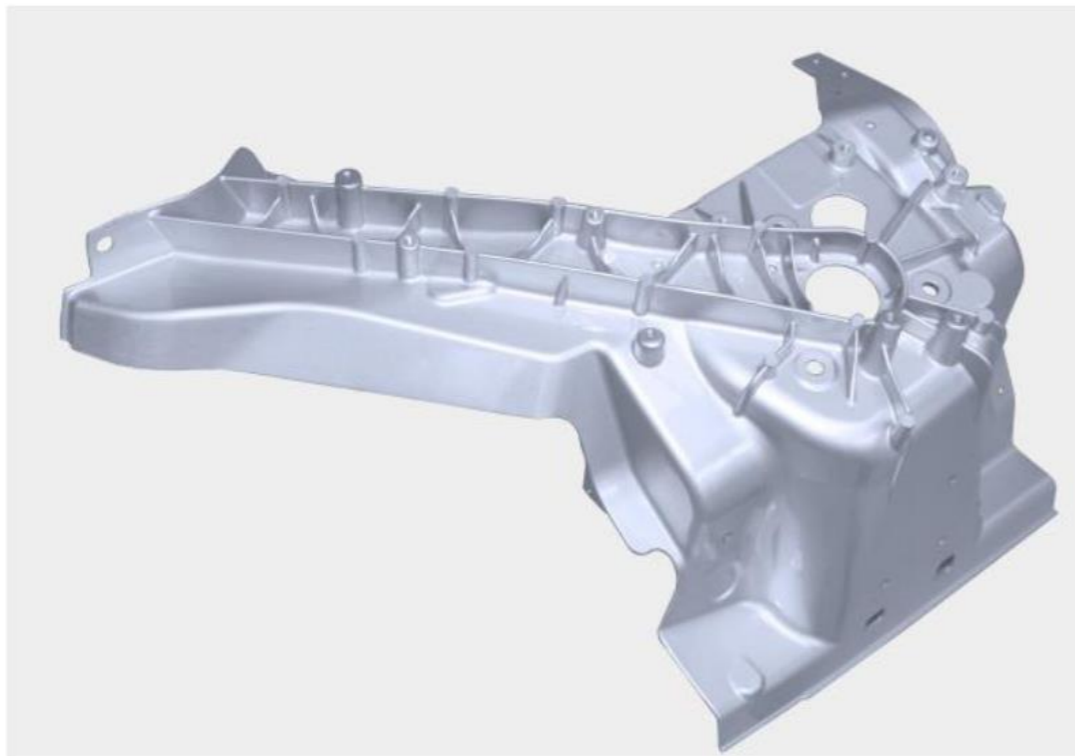
Material and process
 information about MB
 C-Class W205
 Limousine front
 suspension domes

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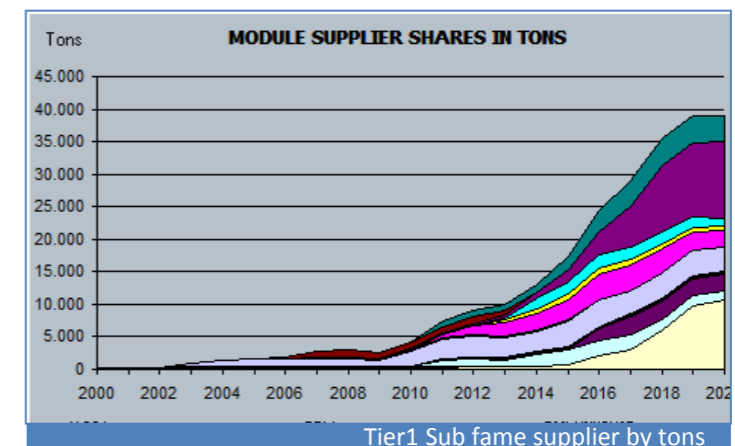
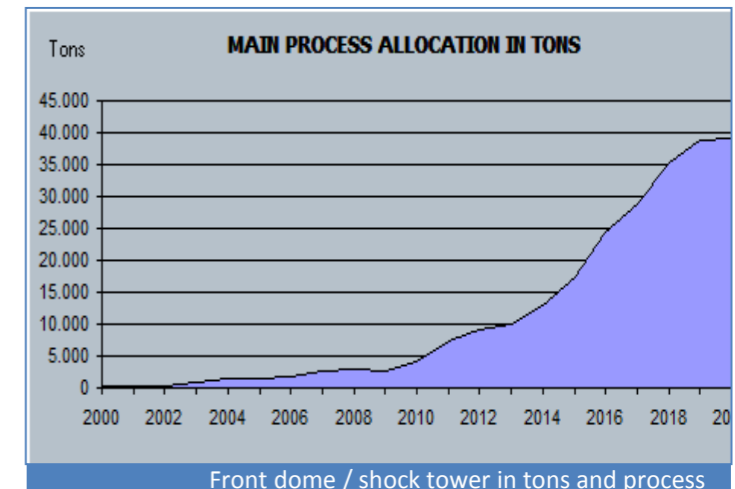
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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

Automotive Application Database – Sample: Front dome by Tier1 supplier, process and tons from year 2000 to 2025



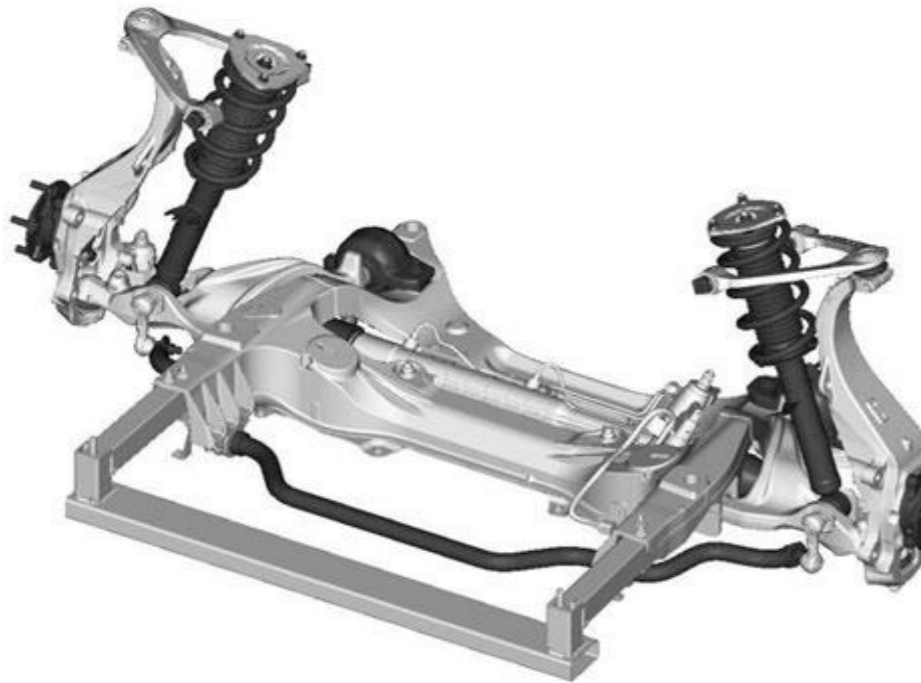
AluMag supplies detailed material and process focused demand analyses in the timeframe 2000 – 2025 for any region in the world.



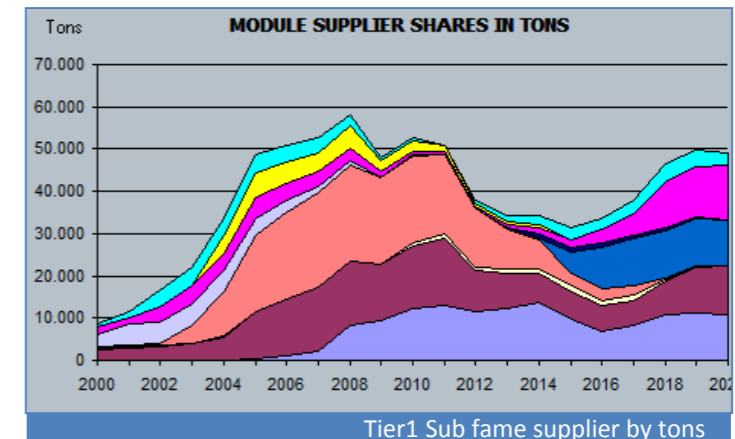
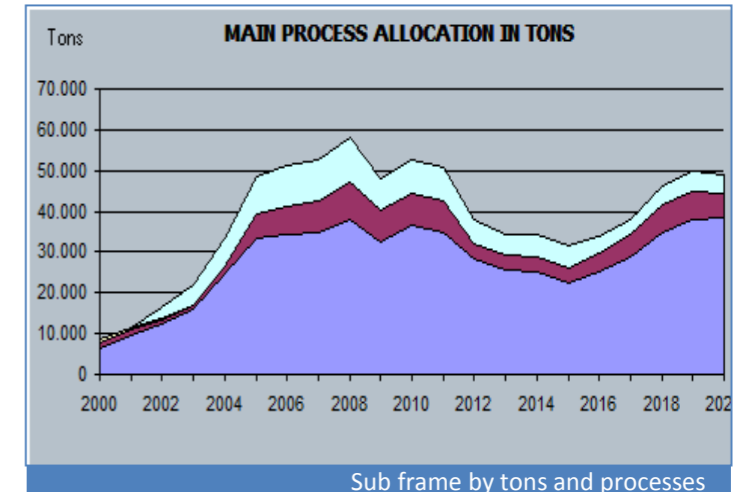
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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

Automotive Application Database – Sample: Front Sub frame by Tier1 supplier, processes and tons from year 2000 to 2025



AluMag supplies detailed material and process focused demand analyses in the timeframe 2000 – 2025 for any region in the world.

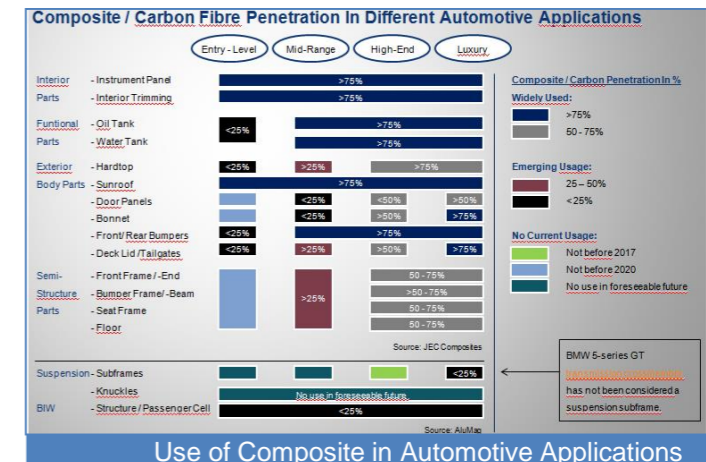


Carbon Composite Analysis – Sample I

AluMag has analyzed the composite / carbon fiber threat against cast aluminum within suspension and BIW applications.

The main goal was to provide the client (European aluminum foundry) with an application overview outlining the composite / carbon fiber threat by means of a timeline “*What to expect when*”.

The timeline was based on existing AluMag market information as well as on 20 interviews with industry experts representing OEMs, carbon fiber producers and tool makers.



Use of Composite in Automotive Applications



Mercedes SLK R172 roll over protection



Lamborghini Aventador passenger cell



Bentley Mulsanne spare wheel box

Carbon Composite Analysis – Sample II

For a Chinese producer of electronic equipment AluMag executed a global snapshot study of the automotive CFRP market.

CFRP Demand & Market Shares

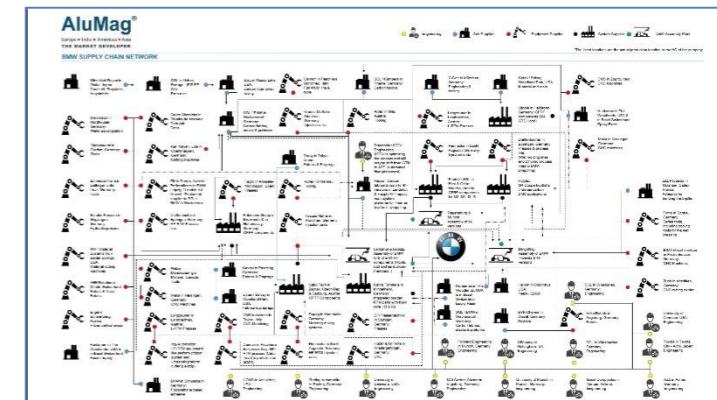
AluMag has analyzed the consumption of CFRP in automotive BIW applications worldwide. Furthermore supplier market shares for each application group were determined.

CFRP Supply Chain

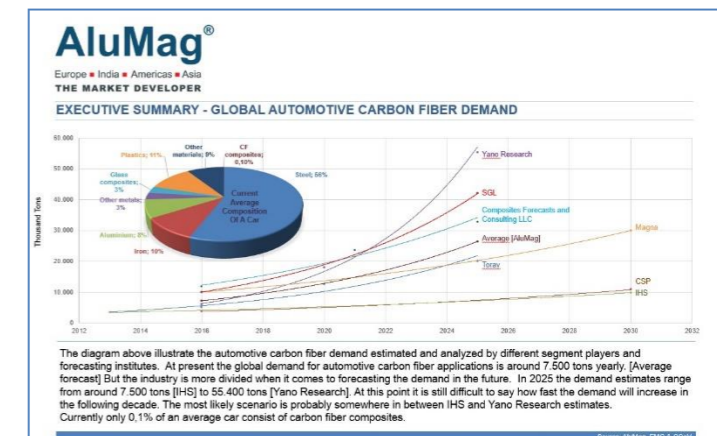
A comprehensive carbon fiber supply chain chart were researched for 6 premium OEMs. In total 110 companies were detected as being part of the 6 OEMs carbon fiber supply chain. For each company a qualified contact is listed

CFRP Application Technology Overview

As part of the analysis several CFRP BIW applications have been thoroughly described in regards to material, process steps, equipment and assembly.



BMW CFRP Supply Chain



CF Automotive Demand Forecast

Customer Database - Sample

AluMag has created a CRM system with several 1000 automotive contacts active within the light weight materials industry. We have the market knowledge and experience to locate new customers for your business. Regardless of region, market, application, material, process or product.

Aluminium Extrusion Customer Database:

- 1,350 European companies detected within the Automotive / Truck Trailer Segment
- 2,140 European companies detected within industrial segments
- Total yearly aluminum extrusion demand: 800,000 tons

Database Content:

- Full company address
- Purchase contact details incl. direct e-mail & phone
- Demand by company
- Demand allocated by EAA segment

Company:	City:	Country:	Total Demand:	Contact:
A.B.T. GmbH Aluminium Bearbeitung	Nidda-Borsdorf	Germany	200	<input type="button" value="Company"/> <input type="button" value="Person"/>
ACM Fahrzeugtechnik GmbH	Rottenburg/ Neckar	Germany	100	<input type="button" value="Company"/> <input type="button" value="Person"/>
ACS - Advanced Comfort Systems	Elancourt	France	450	<input type="button" value="Company"/> <input type="button" value="Person"/>
ACS - Advanced Comfort Systems	Bressuire Cedex	France	3	<input type="button" value="Company"/> <input type="button" value="Person"/>
Adam Opel AG	Rüsselsheim	Germany	6.180	<input type="button" value="Company"/> <input type="button" value="Person"/>
AGC Glass Europe - Central Office		France	1	<input type="button" value="Company"/> <input type="button" value="Person"/>
Aixam-Mega	Aix-lex-Bains Cedex	France	1.875	<input type="button" value="Company"/> <input type="button" value="Person"/>

Supplier Database – Sample

Global Permanent Mould Foundries

- GDC, LPDC, HPDC, Hollow cast
- For HPDC >800 tons clamping force
- More than 400+ groups with over 800 casting / foundries / plants

Analyzed criteria for each plant:

(Selected by the client)

- Full plant address
- Contact person
- Clamping force range [for HPDC]
- Number of casting cells / machines
- In-house engineering, tooling, CNC, heat treatment, availability
- Certifications
- Core references and customers
- Automotive applications in production

Kind of Location	Location	State	Aluminium Share [%]	Magnesium Share [%]	Force From [T]	Force To [T]	No. HPDC ≤ 400 [T]	No. HPDC ≤ 1000 [T]	No. HPDC ≤ 1500 [T]	No. HPDC ≤ 2000 [T]	No. HPDC ≤ 2500 [T]	No. HPDC > 3000 [T]	Total No. HPDC	CNC	Tool Shop	Casting Processes
Plant	USA	CA	100	0	125	925							8	Yes	No	HPDC
HQ & Plant	USA	CA	100	0	400	900	1	7	0	0	0	0	8	Yes	No	HPDC, Vacuum
Plant	USA	TN	100	0	600	1.600	0	9	4	1	0	0	14	Yes	No	HPDC
Plant	USA	MN	100	0	400	1.000	0	9	0	0	0	0	9	Yes	No	HPDC, Squeeze Castings
Plant	USA	NC	100	0	1.000	1.000	0	3	0	0	0	0	3	Yes	Yes	HPDC
Plant	USA	MN	100	0	250	1.200	2	11	2	0	0	0	15	Yes	No	HPDC
HQ & Plant	USA	MN	100	0	250	1.600							15	Yes	No	HPDC, SC, LPDC, Squeeze cast, GD
HQ & Plant	USA	IN	100	0	250	1.200	3		15	0	0	0	18	Yes	Yes	HPDC, Vacuum
HQ & Plant	USA	WI	100	0	400	1.600				17	0	0	17	Yes	Yes	HPDC, Squeeze Casting
Plant	USA	WI	100	0	400	1.600				10	0	0	10	Yes	Yes	HPDC, Squeeze Casting
HQ & Plant	USA	IN	100	0	250	1.650	15	3	2	1	0	0	21	Yes	No	HPDC
Plant	MEX	Querétaro	100	0										Yes	No	HPDC
HQ & Plant	USA	WI	100	0	700	2.500	0		25		7	0	32	Yes	Yes	HPDC, Low Pressure
Plant	USA	MI	0	100	800	3.500	0		6			9	15	Yes	No	HPDC
Plant	MEX	Coahuila	100	0	800	1.600	0		1	3	0	0	4	Yes	No	HPDC
HQ & Plant	CAN	ON	0	100	420	4.400	0		23			17	40	Yes	No	HPDC
Plant	USA	OH	100	0	1.250	1.800								No	No	HPDC
Plant	USA	WI	100	0	400	3.500							15	Yes	No	HPDC
Plant	USA	WI	100	0	1.600	3.500							26	Yes	No	HPDC
Plant	USA	KY	100	0	400	3.500							21	Yes	No	HPDC
Plant	USA	AL	100	0	1.500	2.500	0	0	0			15	15	Yes	No	HPDC

Case Study: European Study On Top 15 GDC And LPDC Foundries As Well As Applications 2020

Base and Back ground

- Within an overseeing period of time, client will run-out of orders for exciting process lines in the location XXX with casting cells in line and round tables
- Client will get an entire overview about the market players and applications
- Cylinder heads are not really in the clients focus. But, GDC & LPDC machines which are processing Cylinder heads today, could be used in future for any other products too. Means, this capacity / company will be looked at too
- The research will consider entire Europe
- The machines / area, which will run out of production, could be use with:
 - existing machines for new products
 - refurbished / modified existing machines for new products
 - new machines for new products

Scope:

- GDC and LPDC including hollow cast and counter pressure in Europe 28
- Market player and their products / applications
- Proposed application by AluMag

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TOP 15 COMPANIES

LINAMAR / MONTUPET

LINAMAR
Power to Perform

MONTUPET

Total Revenue:
453 Mill. EUR

GDC & LPDC Revenue:
453 Mill. EUR

GDC & LPDC Locations:

- Laigneville, France
- Dions, France
- Zaragoza, Spain
- Ruse, Bulgaria
- Torreón, Coahuila, Mexico
- Belfast, N. Ireland
- Pune, India (Joint Venture)

Products
 Cylinder heads, Wheel carriers, Turbo charger housings, Brakemaster cylinders, EGR valves, Pump housings, Calipers, Manifolds.

Approximately 80% of Montupet's revenue is generated by cast aluminium and rough machined cylinder heads. Linamar, alternatively, is a world leader in the finished machining of aluminium cylinder heads and in the assembly of these complex components, producing nearly 7 million cylinder heads last year.

Quote: AluMag - Montupet

Linamar / Montupet Overview

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TOP 15 COMPANIES

CSA HERZOGENBURG

CSA
HERZOGENBURG

Total Revenue:
32 Mill EUR (Est)

GDC & LPDC Revenue:
32 Mill EUR (Est)

GDC & LPDC Locations:

- Herzogenburg, Germany

Products
 Wheel carriers, Linkarms, Subframe nodes, Suspension crossmembers, Differential subframes (ZB Hat Adapter), Steering valve housings, Pump housings, Flivwheel housings, Cross oil pans

Steering valve housing for multiple models in gravity die casting 0,7kg

Pump housing for multiple models in LPDC 1,3 - 1,5kg

MAN truck flywheel housing in LPDC 24.6kg

MAN truck cross oil pan in LPDC 36, 1kg

Quote: AluMag - CSA

CSA [Former Georg Fischer] Overview

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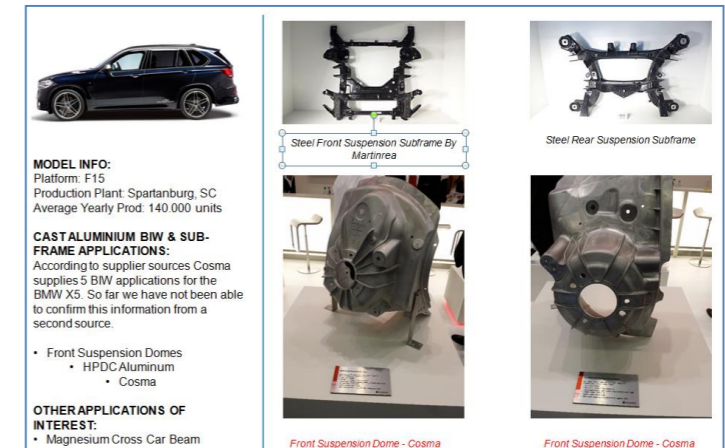
MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

Case Study: HPDC Automotive Aluminum Applications In Nafta

Short Scope Extraction

The client is a Japan based aluminum processing company and a leader in the industry. The client would like to get a sustainable understanding and benchmark of the global industry leaders like; NemaK which specializes in the production of cast aluminum powertrain components such as cylinder heads, engine blocks and transmission parts for light vehicles. Since the cast structural “body in white” [BIW] will be applied for areas where strong part integration is feasible, NemaK is going to target new components / areas like thin-wall, ductile and weldable castings. This is a target market for the client too. The client has requested support from AluMag to execute the following services and analyze:

- Leading cast aluminum structures supplier for body and chassis parts
- Selected car manufacturer in NA with their in-house casting, future strategy and make or buy decision as well as decision maker
- Body and chassis segment NA, strategy, locations, expansions, supplier selection process and risks at selected car manufacturers
-



MODEL INFO:
Platform: F15
Production Plant: Spartanburg, SC
Average Yearly Prod: 140,000 units

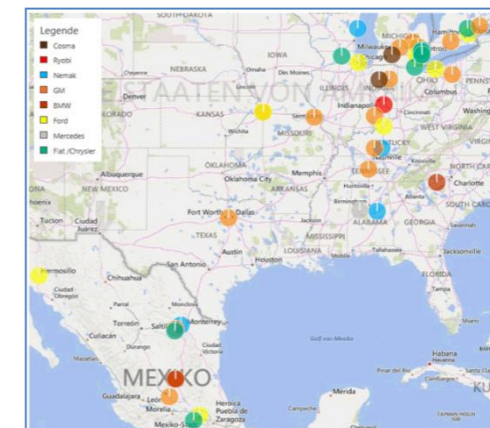
CAST ALUMINIUM BIW & SUB-FRAME APPLICATIONS:
According to supplier sources Cosma supplies 5 BIW applications for the BMW X5. So far we have not been able to confirm this information from a second source.

- Front Suspension Domes
 - HPDC Aluminum
 - Cosma

OTHER APPLICATIONS OF INTEREST:

- Magnesium Cross Car Beam
- Supplier Meridian

BMW X5 & X6 Light Weighting by Material and Supplier



Being inside the OEM's supplier parks is not mandatory but an advantage in terms of transportation costs and logistics.

Cosma with facilities in Indiana and Michigan is supplying the Cadillac ATS with suspension domes. The ATS is being produced in Lansing, MI which is located about 100 KM (60 miles) from Cosma facility in Battle Creek, MI.

Bocar, being the supplier of several HPDC structural parts for the MB C-Class W205, has no foundry in USA but is supplying the Mercedes plant in Alabama from their Mexican facilities.

M. Honsel is supplier of the front and rear suspension subframes for the Cadillac CT6 being produced in Detroit, MI. M. Honsel foundry is located in Mexico.

Localization of Structural HPDC Facilities in NA

Case Study: Global Cast and Forged Alloy Wheel Market


Summary Extraction

Worldwide the market for OE aluminium wheels is expected to grow with 0,91% in the period 2014-2015 within light weight vehicles. From 44% in 2014 to 45% in 2015. In the period 2014-2029 a growth rate of 7% is expected which will bring the worldwide penetration of OE aluminium wheels up to 51% in 2029. The highest growth rates in the period 2014-2029 are expected in China (14%), Japan (13,5%) and Central Europe (15%). Cast wheels will remain the preferred alloy wheel for light weight vehicles while the penetration of forged wheels is expected to grow moderate over the coming years. Today forged wheels are primarily used on high end vehicles and sports cars, but the booming electric vehicle segment could boost the penetration of forging wheels in the near future. On the other hand new hybrid wheels to be launched by Maxion / Thyssen could become a threat to forging wheels manufacturers.

The penetration of forged wheels within commercial vehicles (Medium – heavy duty trucks, trailers and buses) is 13% on average in the analysed regions. Again Nafta is the market with the highest penetration rate of forged wheels with 40%. Trailers and trucks in Nafta has in general more axles compared to other regions,...

AluMag® TRIAD GENERIC RIM MASS MARKET OVERVIEW AND KEY PLAYERS
 Europe ■ India ■ Americas ■ Asia
THE MARKET DEVELOPER

SUMMARY – FORGING COMPANIES – KEY PLAYERS



Key Facts:
 OE Demand For Forged Alu Wheels in Triad Region:
 Total Forged Wheels: 15 738 417
 Commercial: 2 952 482
 Light Weight Vehicles: 12 785 935
 Available Capacity By Top 10 Forging Companies:
 24 900 000 alu forge wheels yearly


COMPANY	COUNTRY OF ORIGIN	WHEELS TYPE	MIO CAP.
Alcoa	USA	Forge	9.5
Liaoning Zhongxiang Alu	China	Forge	5.0
Dicastal	China	Forge	2.6
Otto Fuchs	Germany	Forge	2.0
Lian Yunqiang Gemsy	China	Forge	2.0
SuperAlloy Industrial Co	China	Forge	1.4
Accuride	USA	Forge	1.1
Shandong Zhengyu Forging	China	Forge	0.5
Alstar	South Korea	Forge	0.5
AluForge	South Korea	Forge	0.5

The combined capacity of the top 10 forging wheels manufacturers is 24.9 mio units yearly while the OEM demand is only at 15.7 mio units in the analysed region (Triad). A considerable number of wheels (9.2 mio units) are therefore being sold through aftermarket channels, sold outside the triad region or is simply free capacity.

Global Cast Alloy Wheel Market Summary & Outlook

AluMag® TRIAD GENERIC RIM MASS MARKET OVERVIEW AND KEY PLAYERS
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SUMMARY – CAST COMPANIES – KEY PLAYERS



Key Facts:
 OE Demand For Cast Alu Wheels in Triad Region:
 Total Cast Wheels: 131 896 152
 Commercial: 0
 Light Weight Vehicles: 131 896 152
 Available Capacity By Top 12 Cast Wheel Companies:
 201 900 000 alu cast wheels yearly

COMPANY	COUNTRY OF ORIGIN	WHEELS TYPE	MIO CAP.
Dicastal	China	Alu Cast	32.4
ENKEI	Japan	Alu Cast	25.0
Borbet	Germany	Alu Cast	20.0
Ronal	Switzerland	Alu Cast	19.2
Wanfeng	China	Alu Cast	18.0
Maxion	USA	Alu Cast	14.8
Lixhene	China	Alu Cast	13.6
Superior	USA	Alu Cast	13.2
ZNA	China	Alu Cast	12.0
Prime	USA	Alu Cast	11.7
Hands	South Korea	Alu Cast	11.0
Sheng Wang	China	Alu Cast	11.0

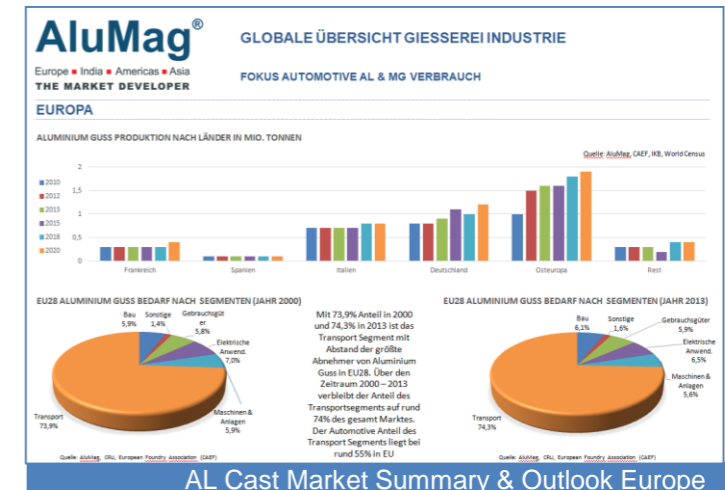
The combined capacity of the top 12 cast wheel companies far exceed the OE demand in the analysed Triad region. Even though the total alu cast wheels capacity in the analysed region is much higher as the list only consider the protagonist. In China alone the total output of aluminium wheels was 148 mio units in 2013 expecting to rise to 238 mio units in 2018. The demand primarily comes from the aftermarket and regions outside the analysed triad.

Global Forged Alloy Wheel Market Summary & Outlook

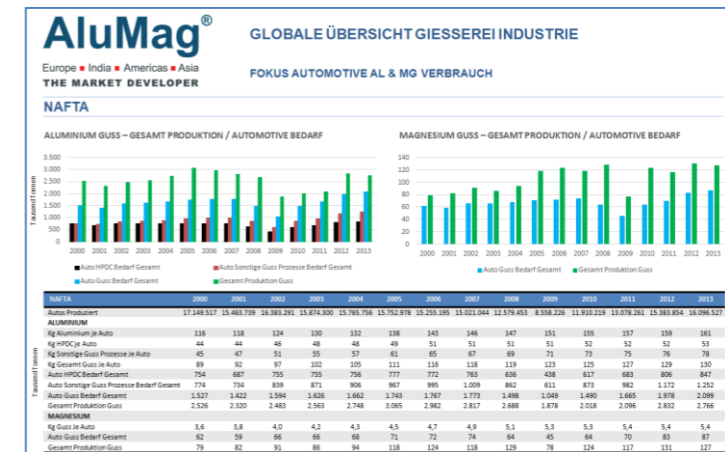
Case Study: Global Non Ferro Casting Industry Analysis

Snap Shot Summary Extraction

Cast aluminum is primarily used in power train applications, such as cylinder heads, engine blocks and transmission housings. In NA about 85% of all vehicles are equipped with an aluminum engine block. In Europe, this figure is 55%, 60% in China and 45% in Brazil [2015]. For 2020, a penetration rate of 89% in NA is expected during can be expected in Europe with 60%, 66% in China and 64% in Brazil. **Another important application is cast aluminum wheels**, currently around 45% of all vehicles sold are equipped with original cast aluminum wheels world wide. In NA, the OE incorporation rate is of 77% [2015]. For 2025 OE penetration rate of 50% is expected worldwide. When it comes to **BIW structures**, especially sports cars are equipped with cast aluminum [vacuum HPDC] since the 90s. Audi initiated the turn with the introduction of an aluminum frame for medium to high Volume vehicles (A8 and A2) beginning of this millennium. The Audi "space frame" Was made of cast-, extruded- and sheet aluminum processed parts. With a very High growth rate of applications in the automotive structure, aluminum is no longer A rarity. New generations of models of high-end car manufacturers such as MB[C, E, and S-Class], BMW [X5, X6, 5 & 7-Series], JLR [Range Rover, Range Rover Sport, XJ, F-Type, XE] Cadillac [ATS, CTS, CT6], Audi [Q7, A4, TT, A8, A6] have ..



AL Cast Market Summary & Outlook Europe



AL Cast Market Summary & Outlook NAFTA

Case Study: Aluminum M&A Targets Report

Snap Shot Scope & Example Extraction

Client intends to make a strategic investment in an on the technological basis leading small or middle sized company with its own melting operation in-house, with the potential to grow and to globalize, regardless which aluminum cast process is used by the company, except sand casting. Nevertheless hollow casting is preferred by the client.

Forging is an alternative, but not extrusions. The client could also great with an acquired technology hub a global acting light weighting group with a minority stake and/or with a second investor. The first M&A target could be localized in any region of the world. The max revenue of app should be 1,000Mill USD.

AluMag provided the client a report to introduce 14 M&A target companies in compliance with the above listed conditions. For each target the following information will has been be researched:

- Estimated Enterprise Value (calculated based on its EBIT or EBITDA multiple), Ownership & dept structure;
- CapEx, Growth, Sustaining,
-

The screenshot displays two 'Facility Factsheet' sections. Each section includes a company logo, contact information (Company Name, Country, Address, Phone, Email, Website), and a detailed table of facility specifications. The table columns include: Plant Name, Location, Capacity (Tons/Year), Production Capacity (Tons/Year), Investment (Million USD), and various equipment types (e.g., Melting Furnace, Casting Machine, etc.).

Example Of The Fact Sheet Of A M&A Target

The screenshot shows the 'SUMMARY' section of a target company report. It includes a paragraph describing the company's background and market position. Below this, there are three bolded sections: **BFBFBFBFBF**, **BFABFABAF**, and **BCGBCGBCG**, each followed by a short description of the company's operations and market focus.

AL Cast Market Summary & Outlook NAFTA

AluMag Data Research & Validation

- **AluMag Daily Data Research**
 - Media research – Internet, automotive & light weight magazines
 - Tradeshows
 - Business meetings & phone calls
- **We Never Start From Zero!**

Due to our comprehensive application databases we start an analysis with between 20% & 100% market coverage.
- **AluMag Contact Network**

A substantial contact network within the automotive and light weight industry is crucial for the execution of a market analysis. AluMag maintains a CRM system with several thousands up to date contacts. Regardless of application, material & process our analyses are always backed & validated by several industry experts.
- **Customer Satisfaction Guaranteed**

An AluMag analysis is finished when the client is satisfied.



Europe ■ India ■ Americas ■ Asia

THE MARKET DEVELOPER

MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

AluMag access new markets and open doors for your business – regardless of market, application, material, process or product.

We guide and support your organization globally through the different development phases until we have successfully launched, implemented or executed your project.

AluMag[®] makes you successful - worldwide!



JATCO Head Quarters Meeting in Japan



NISSAN UK Lightweight Meeting

Customer Benefits

- Analysis and Development of Market Opportunities
- Accelerate Market Penetration
- Establish a Sales Force
- Provide Warehousing and Distribution Services
- Manage New Product Launches
- Sales on Demand



AISIN Management Procurement Meeting in Japan

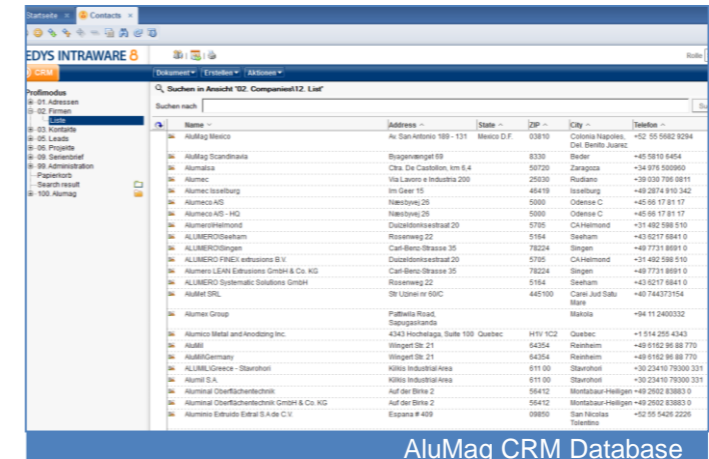
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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

INITIATE AND MAINTAIN BUSINESS CONTACTS GLOBAL

Since the foundation of AluMag® in 1994, AluMag® has created a business contact database with over 22K contacts in 7K companies. Each new or existing business contact is recorded from first day and maintained on a daily or demand and worldwide basis. This is just one access to open new doors for your business.

Due to the world-wide network and partnership, AluMag® is supporting global companies on cross border Mergers and Acquisitions.



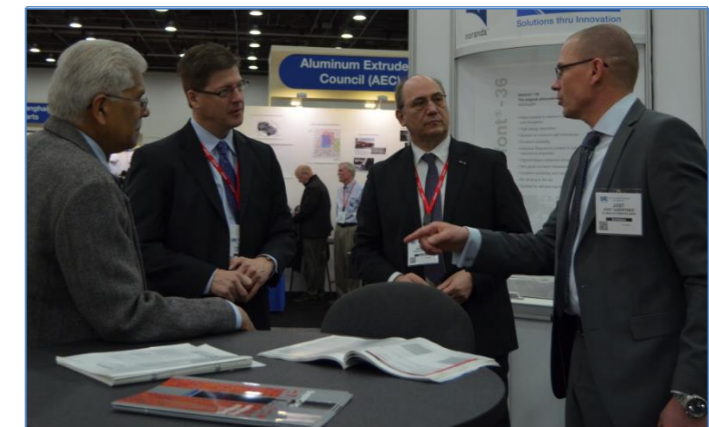
Name	Address	State	ZIP	City	Telephone
AluMag Mexico	Avenida San Antonio 189 - 131	Mexico D.F.	03810	Colima Zapotec	+52 55 5962 9294
AluMag Scandinavia	Bjergengenvej 89		8330	Bader	+45 5810 4454
Alumina	Chia De Castillon, km 5.4		50720	Zaragoza	+34 978 505960
Alumec	Val Laine e Industria 200		25030	Budapest	+38 030 790 8811
Alumec Isseburg	Im Geer 15		45419	Isseburg	+49 2874 910 342
Alumico AG	Niedstr. 20		5000	Odense C	+45 66 17 81 17
Alumico AG - HG	Niedstr. 20		5000	Odense C	+45 66 17 81 17
Alumico Helmond	Duchikensstraat 20		5705	CA Helmond	+31 432 588 510
ALUMERCOseam	Rosenweg 22		5164	Seeham	+43 6217 6841 0
ALUMERCOsingem	Carl-Benz-Strasse 35		78224	Singen	+49 7731 8891 0
ALUMERO FINECH Extrusions S.V.	Duchikensstraat 20		5705	CA Helmond	+31 432 588 510
Alumero LEAN Extrusions GmbH & Co. KG	Carl-Benz-Strasse 35		78224	Singen	+49 7731 8891 0
ALUMERO Systematic Solutions GmbH	Rosenweg 22		5164	Seeham	+43 6217 6841 0
Husler SRL	De Uppelre 65C		445100	Cava Just Dabo Mare	+40 744273754
Alumex Group	Pfaffels Road, Tringoparima			Matola	+64 11 2400332
Alumico Metal and Anodizing Inc.	4343 Hochelaga, Suite 100	Quebec	H1V 1C2	Quebec	+1 514 295 4343
AluMag	Wingert Str. 21		64354	Rheinheim	+49 6162 96 88 770
AluMagGermany	Wingert Str. 21		64354	Rheinheim	+49 6162 96 88 770
ALUMIL Greece - Stavros	Kilwa Industrial Area		611 00	Stavros	+30 23410 79300 331
Alumi S.A.	Kilwa Industrial Area		611 00	Stavros	+30 23410 79300 331
Aluminal Oberflächentechnik	Auf der Birke 2		56412	Montabaur-Heiligen	+49 2602 83883 0
Aluminal Oberflächentechnik GmbH & Co. KG	Auf der Birke 2		56412	Montabaur-Heiligen	+49 2602 83883 0
Alumico Extrudal S de C.V.	España # 409		08850	San Nicolas Tolentino	+52 55 5428 2226

AluMag CRM Database

PROJECT MANAGEMENT

Manage and integrate each aspect of your organization by initiating, planning, controlling, executing and closing out a new project, AluMag® provides tailored flexible standard processes which are mapped to the specific objectives of the client's project.

AluMag® offers liaison management services as an addition to our customer's staff by bringing in the resources that define us – our experienced people and sales management tools as well as routines.



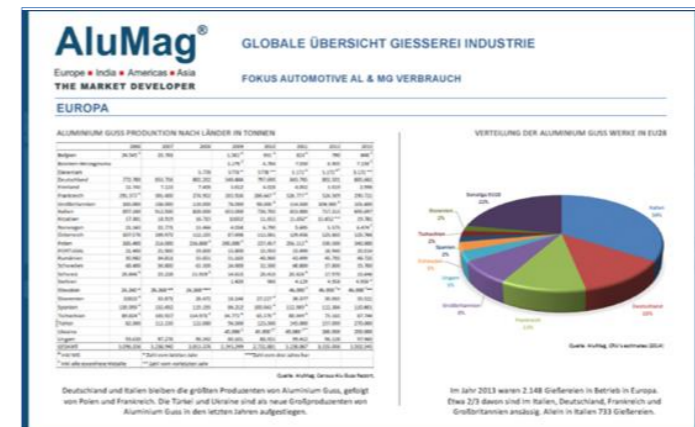
SAE Meeting with Rheinfelden Alloys in Detroit

BENEFIT FROM OUR EXPERIENCE WITH JAPANESE CLIENTS - GLOBALLY:

- Existing direct and personal access to almost all Japanese OEMs R&D suspension engineers and purchasing managers [Toyota, Honda, Nissan, Mazda, Subaru, Mitsubishi, Suzuki, Fuso, Hino, Isuzu...]
- Connected to the leading Japanese Tier1 [Aisin, Denso, F.Tech, Futaba, ...]
- Direct access to Japanese OEMs headquarter and also locations globally
- Gathering and analyzing actual potential customers global market demand
- Analyzing OEMs in-housing capacities and Japanese Tier 1 competitors capability
- Reputation to Japanese customers: AluMag receiving continually requests from Japanese OEMs, Tier 1s on European/NA located supplier recommendation for various applications
- Deep culture and language understanding on each OEMs: Keiretsu, top-to-down, teamwork, company policy...
- On behalf of clients interest: AluMag could visit Japanese customers with/without clients member/s, organizing technical or commercial meetings for project acquisitions, joining RFQ and quotation discussion...



Joint Honda Meeting with Purchasing and R&D



Global Overview of Cast Al & Mg by AluMag

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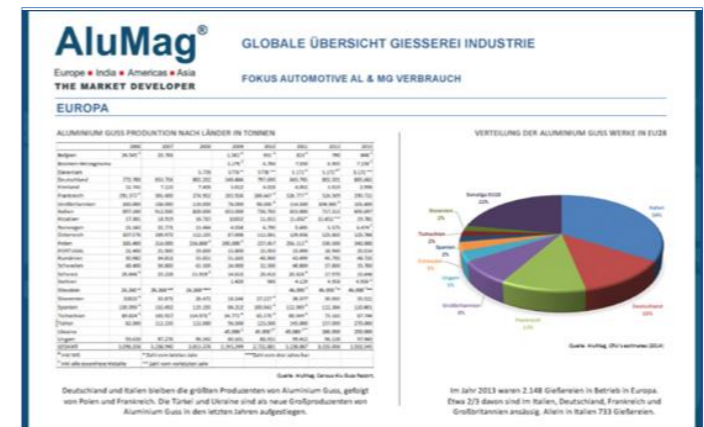
MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

BENEFIT FROM ALUMAG MERITS AND EXPERIENCES GLOBALLY:

- Detect and realize opportunities, finally accelerate market penetration for clients
- Lotus Notes based CRM Database, with 22K contacts allocated to 7K companies, from AISIN and AUDI to ZF and ZHEJIANG GEELY. Each new or existing business contact is recorded from first day and maintained on a daily or demand and worldwide basis. This is just one access to open new doors for your business
- The CRM is mandatory to be used, first class integrated and maintained by each AluMag member in their daily communication, project work, research, ...
- On-going analyzing / tracking of OEM and Tier 1 needs and in-housing
- Manage and integrate each aspect of the clients organization by initiating, planning, controlling, executing and closing out a new project
- AluMag offers liaison management services as an addition to clients management / staff by bringing in the resources that define us
- AluMag guides and supports clients globally through the different market development phases until we have successfully launched, implemented or executed
- Material, process and application skilled, flanked by cultural and language intellect by AluMag members, which burning for their customers projects [native: American, Chinese/Japanese, Danish, German, Mexican, Polish]



Gathering further Executive Contacts by Symposia

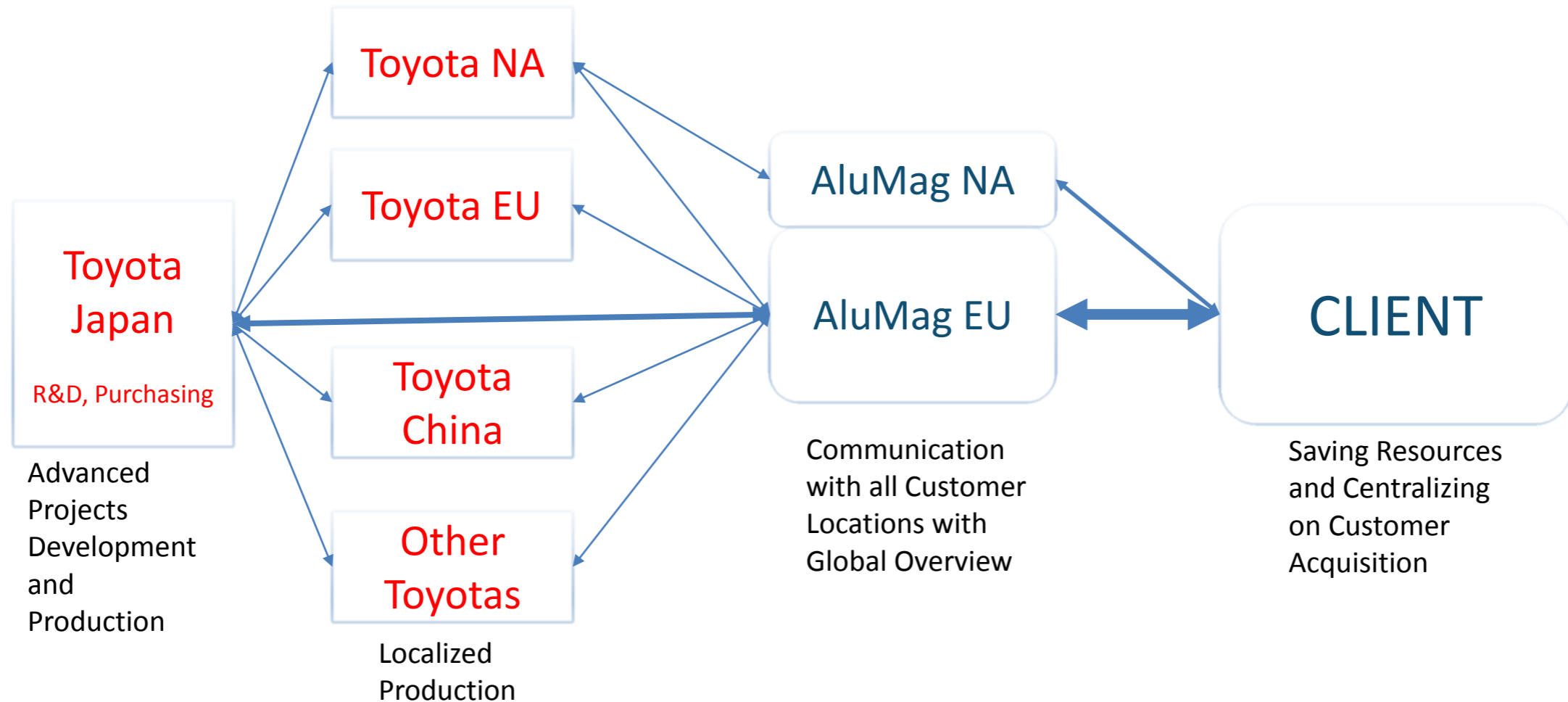


Global Overview of Cast Al & Mg by AluMag

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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION



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MARKET RESEARCH MARKET DEVELOPMENT **ROADSHOWS / EVENTS** STRATEGIC LOCALIZATION



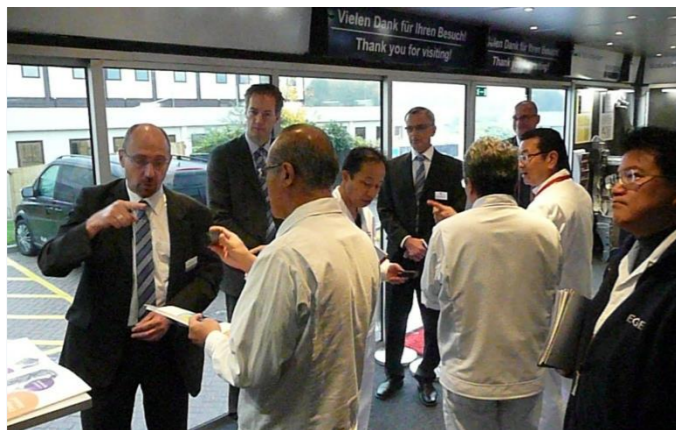
Daimler Sindelfingen as Roadshow Location

The Roadshow is the first class on-site contact event used by exhibitors and guest as a unique benchmark platform.

Attendees for the AluMag Roadshows and events will attract contacts from all kind of departments as well as the management and board members.



2nd Floor Roadshow Trailer Inside View: Tech-Paper



VIP Round with Takahiro Hachigo at HONDA UK

Kind of Events

- Organization of acquisition Roadshows
- Organization of technical Roadshows
- Commercial and technical events
- Host in-house events and presentations



1st Floor Roadshow Trailer Inside View: Exhibition

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MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

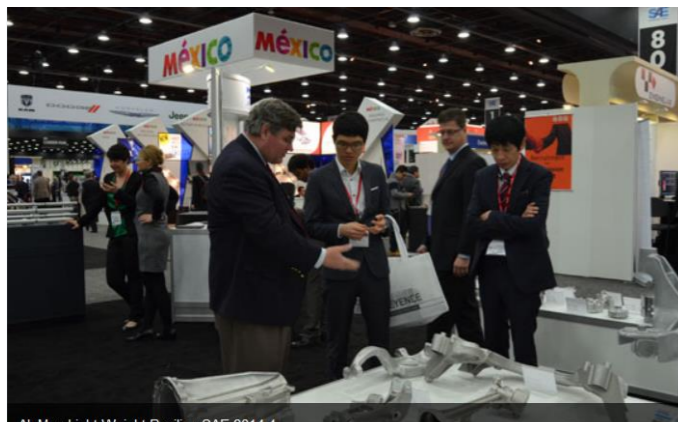
AluMag has leveraged a global community of business executives to create a world-class platform to support executives make the right contacts and decisions for their organization.

Our unique events are bringing in decision maker and executives in EUROPE, ASIA and NAFTA.

Interchange of information, intensifying your champion network, getting input to create your individual best practice strategy, are just some aspects of attendees and speakers benefit in being part of an AluMag event.



AUDI Q7 Light Weight Paper Shanghai 2015

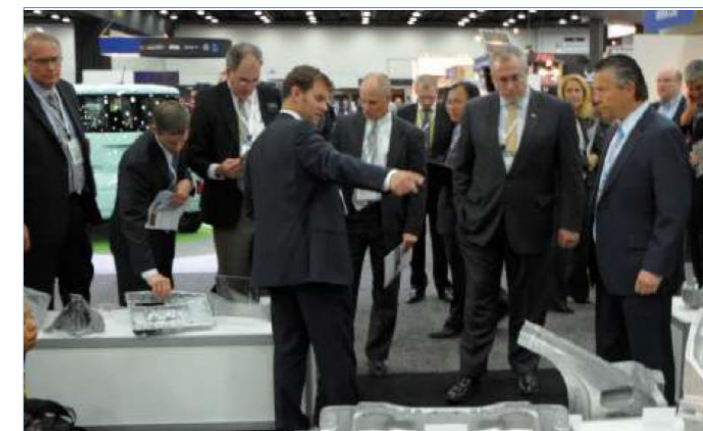


AluMag Light Weight Pavilion SAE 2014 4

Organizing Tech & Procurement Shows Globally

Up-Coming Events

- 2017 Sep: ASIA Roadshow with Leading Supplier about Lightweight & Emission Reduction at European OEM
- 2018 Apr: Common Technology Booth about Lightweight and Emission Reduction as well as car comfort at the SAE World Congress in Detroit, MI, USA
- 2018 Feb or Apr: NA Supply-Chain Automotive Lightweight Symposium [SCALS] with co-host of an OEM t.b.a.
- 2018 Oct: EUROPE SCALS with an OEM co-host



General Motors VIP at AluMag Booth SAE in Detroit

MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

AluMag® has the global expertise to search, identify, evaluate and validate potential strategic business opportunities for expansions and partnerships that will assist your business growth plans regionally and globally. Whether it is metal or plastic or land, sea or air in application, our experience with product, process and materials is global with personnel active in Europe, India, China, Japan, Mexico and the US.

- Search, develop and present potential acquisition candidates for regional and global business expansion
- Localization of new manufacturing / service sites for business expansions
- Identification of new technology supplier development about product, processes and materials
- Search, develop and present potential business partners / suppliers to support regional and/or global supply programs
- Identify and present:
 - Existing barriers to current and/or new business participation
 - Potential competitor profiles for new or existing business in non-presence geographies
 - New emerging technologies and processes for business expansion



On-Site Audits for Customer Visits & Tie-up validation



On-Site Greenfield Planning Meeting

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REFERENCES

LARGE VARIETY OF CUSTOMERS – LOCAL, REGIONAL AND GLOBAL

Since the foundation of AluMag® in 1994, AluMag® has helped a large variety of customers worldwide to become successful.

With more than 40+ events, AluMag® has a strong position at the market of research. Furthermore we have created a business contact database with more than 7,000+ companies.

- More than 180+ satisfied customers worldwide
- Arranged more than 40+ events like road shows, in-house tech and commercial meetings as well as supply-chain symposia since 2008
- 22.000+ contacts in database
- Global active – we are where our clients want us to be



Satisfied AluMag Customer in Mexico

The screenshot shows a CRM interface with a search bar and a list of companies. The list includes columns for Name, Address, State, ZIP, City, and Telefon. Below the list, there is a section for 'Personen' with columns for Name, Branch, Phone, Mobile, and E-mail.

Name	Address	State	ZIP	City	Telefon
Porsche AG	Porschestraße 42		71287	Wetzlar	+49 711 911
Porsche AG			70425	Stuttgart-Zuffenhausen	+49 711 911
Porsche City Group	1985 E Lathrop Ave	Michigan	49442	Muskegon, MI	+1 231 772
Porsche Consolidated	5007 Denver Street	Florida	33619	Tampa	+1 813 247
Porsche Hummo SA	Estrada de São Marcos 23		2735-521	Cacem	+351 21 04
Porsche Performance Co Inc	1337 Bucklefield Rd	Ohio	44889-8105	Worster	+1 330 284
Porsche Group	Pocheon Center, 892 Daehmi-dong, Kangnam-gu		135-777	Kangnam-gu Seoul	+82 2 3457
Porsche	Westbahnstraße 36		4300	St. Valentin	+43 7435 5
Porsche/Cassapolis	201 N. Edwards St	Michigan	49031	Cassapolis	+1 269 445
Porsche/Emhard	511 Pine Creek Ct	Indiana	46515	Elkhart	+1 574 389
Porsche/Hammann Co	511 Pine Creek Ct	Indiana	46515	Elkhart	+1 574 389
Porsche/Exuson Co	201 N. Edwards St	Michigan	49031	Cassapolis	+1 269 445

Name	Branch	Phone	Mobile	E-mail
Albrecht, August	Manager 911 Moderator	+49 711 911 0		august.albrecht@porsche.de
Albers, Ingo (EFAZ)		+49 711 91187529		ingo.albers@porsche.de
Alber, Michael	Quality Assurance Plan	+49 711 911 85457		michael.alber@porsche.de
Altherr, Janrick	Graduate (DF)	+49 711 91118822		janrick.altherr@porsche-engineering.de
Bauer, Lutz	Development Chassis	+49 711 911 84076		lutz.bauer@porsche.de
Baumgärtner, Frank	Executive Director	+49 711 911 87826		frank.baumgaertner@porsche.de

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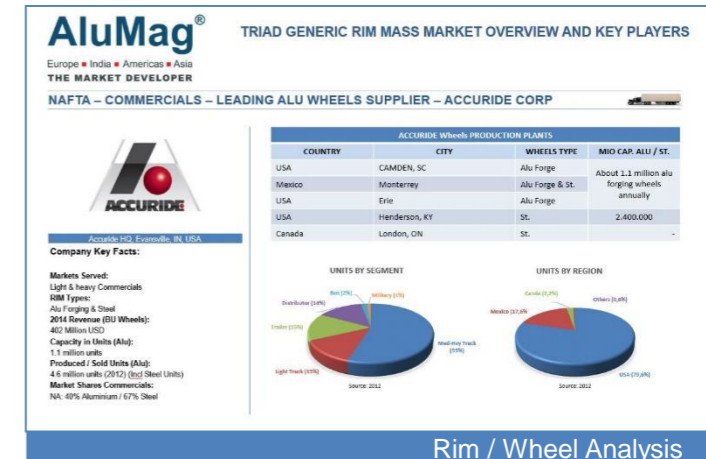
MAP OF ACTIVITIES – SAMPLES & REFERENCES



EXTRACTED REFERENCES

MARKET RESEARCH :

- 2011: European aluminium cylinder head market analysis executed for a German aluminium foundry.
- 2015: Top 15 European automotive aluminium permanent mold foundries were detected and analyzed for a German aluminium foundry.
- 2015: Global cast aluminium / magnesium output allocated by regions, processes and segments from 2000 - 2016. The study was executed for one of the world's leading tradeshow organizers.
- 2015: Global aluminium rim / wheels market analysis was executed for a leading producer of forged aluminium rims.
- 2015: For a leading Japanese aluminium foundry the NAFTA market was analyzed for automotive BIW cast aluminium applications. The study also included a competitor analysis
- 2016: The market potential in NAFTA within automotive BIW & suspension applications, were analyzed for a German aluminium extruder.
- 2016: Global snapshot analysis of the automotive CFRP market for a Chinese electronic applications manufacturer. The study incl. global demand, market shares, supply chain & technology overview.
- 2016: NAFTA automotive sunroof analysis
- 2017: Analysis of the 20 global biggest alloy rim / wheels Tier1 was executed for a leading producer of welding equipment



EXTRACTED REFERENCES

MARKET DEVELOPMENT :

- 1995 - xxxx: German market development for the global biggest aluminium extruder in the automotive market
- 2002 - 2005: W.L. GORE Market Development active and passive climated seats in cars
- 2005 - 2014: Global market development Kruse Chemie with OEM, Tier1 and distributors for the urea [AdBlue] filling and re-filling devices incl. the engineering to reduce NOx
- 2009 - 2013: Global market development for KSM Casting with Japanese and Korean OEM and selected Tier1 focused on chassis and suspension
- 2013 - 2014: Global market development Otto Fuchs for 3D seamless extruded and high strenght pipes in the O&G, Autonomous Underwater Vehicles, Accumulator, ...
- 2013 - xxxx: NAFTA market development of an automotive aluminum system supplier
- 2015 - 2016: Japan OEM market development in the triad for Bharat Forge Aluminium Technik
- 2015 - 2017: Continental Europe market development for a Malaysian Chinese Extruder in the non-automotive market mainly
- 2015 - xxxx: NAFTA market development for a German Tier II aluminum fabricator
- 2017 - xxxx: Global market development for a German highly technology leading electron beam welding manufacturer and contract welder



AluMag® XXXXX AUTOMOTIVE - SERIEN ENTWICKLUNG
 ADBLUE 3,5 & 5,0 LITER NACHBEFÜLLUNG PKW
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KONZEPT- / KOSTENVORSCHLAG: XXXXX ADBLUE LIQUIDE POUCH PROJECT




AdBlue / DEF / UREA Project For NOx Reduction

EXTRACTED REFERENCES

STRATEGIC LOCALIZATION AND M&A STUDIES:

- 2006 - 2014: Projection, execution and operation about and in the name and order of 14 Kruse Chemie JVs. Desolving, tank storage and delivery of fully truck loads to re-seller and OEM with AdBlue / DEF / UREA in NAFTA and Brazil. Further handling the spare part warehouse in Detroit
- 2011 - 2011 Research about the production project partnership of an European automotive group for a potential NAFTA partner about aluminum sub frames [cradles]
- 2013 - 2015: Entire localization, from site selection to turn key building for a German premium Tier 1 in Mexico to ensure the supply to AUDI and CADILLAC
- 2014 - 2014: First validation and selection about a localization in China for a German Tier 1 and its sister company, engaged in general engineering
- 2012 - xxxx: Validation and selection phase to localize a Norwegian - Austrian Group in USA or Mexico
- 2014 - 2015: First localization study incl. mid term profit & loss statement about potential localization in Germany for a Malaysian- Chinese Aluminum Group
- 2015 - 2017: Project management support for the on-site installation of the fuel tank farm at AUDI Mexico for a German liquid & fluid storage equipment manufacturer
- 2015 - xxxx: After sales service for a German CNC tool supplier in USA and MEX
- 2016 – 2017: M&A target analysis and execution for a 20% invest in a technology leading aluminum forming company by a Japanese
- 2016 – xxxx: Mexico localization of tool rework center for German Tool maker

MSK PROCESSINGS GMBH

Final Executive Summary Overview

MSK Partner Search	Partner Capability										Ranking 1=3 2=low 3=high	
	Partner	Assembly	Welding	Design & Dev't	Program Mgt	GM Customer	Part Sourcing	Extruder	US location near MI + 200 Mi	China location		NDA
Benteler	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	Signed	1bd by MSK
Dyna-Mig / F&P = F-Tech	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	3
Metalsa	yes	yes	yes	yes	yes	yes	yes	no	no	no	Signed	3
Metro Technologies	yes	yes	yes	yes	yes	yes	yes	no	yes	no	Signed	3
Sodecia	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	Signed	3
Whitehall Industries	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	1

NAFTA Sub Frame / Engine Cradle Project Partners

AluMag[®] KKKK CHINA LOCALIZATION CONCEPT

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Yangtze River Delta

Nanjing Jiangning Development Zone

Logistic Location	7km away from the downtown Nanjing, water, air and land transportation routes extend in all directions. 30 minutes' drive from Nanjing Port and Nanjing Lukou Airport.
Encouraged Industry	Garment and Textiles Production, automobile production/assembly, biotechnology/pharmaceuticals
Land cost reference	Utilization term more than 10 years. 1st year free, 2nd year 50%, 3rd and 4th year RMB 100/m ² , 5th year RMB 120/m ² , afterwards adjust with Chinese national price index. Acquisition: Min price RMB252/m ² .
Infrastructure cost	Water RMB2.28/ton Electricity RMB0.30-1.12/KWH Gas RMB2.30/m ³
Labor cost	Minimum wage: RMB1480/month
Tax condition	Income Duty 25% (15% as high tech industry, tax of local part 5 years free+5 years 7.5% with additional equity return by local government), VAT 17%, Turnover Tax: 5%(partly return by local government), Stamp Tax: 0.1% of contract amount, 0.05% of increasing capital




CHINA Side Selection Green Field Study

MARKET RESEARCH MARKET DEVELOPMENT ROADSHOWS / EVENTS STRATEGIC LOCALIZATION

WHY DOES CLIENTS ENGAGE ALUMAG:

- Since 1995 successful globally active and experienced with:
 - Automotive, O&G, Truck/Tractor, Trailer, GE, ...
 - Aluminum, Carbon/Composite, Magnesium, Reinforced Plastics, ...
 - Light weighting, Joining, Surface, ...
 - Creating demands and markets
 - Backed with dozen of studies, databases and analysis
 - Organizer of the “Automotive Lightweight Procurement Symposia in Duesseldorf, Shanghai and Detroit” which generates further executive contacts
- Clients recommended to engage AluMag, due to their excellent experiences in former projects
- AluMag capability and reputation as well as skill and network to execute cross selling in various industries and applications, regardless of the region
- Access and use of the entire databases and network, AluMag has “off the shelf”
- Due to the active AluMag relations globally, the maybe shortest way to connect
- Exclusive partnership for defined applications and materials as well as processes, in the areas agreed
-



Successful Market Development



..... with the right, trustful, connected Performer

AluMag®

Europe ■ India ■ Americas ■ Asia
THE MARKET DEVELOPER



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