

# ***aap* Implantate AG**

Information Memorandum  
September 2021

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## Safe Harbor Statement

*Our publication may include predictions, estimates or other information that might be considered forward-looking. While these forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could cause actual results to differ materially. You are cautioned not to place undue reliance on these forward-looking statements, which reflect our opinions only as of the date of this presentation. Please keep in mind that we are not obligating ourselves to revise or publicly release the results of any revision to these forward-looking statements in light of new information or future events. Throughout today's discussion, we will attempt to present some important factors relating to our business that may affect our predictions.*

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## Investment highlights

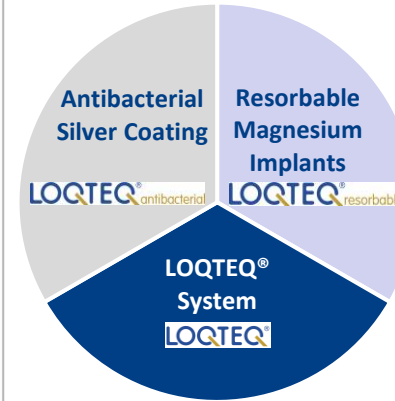
- 1 **New management team** that executed **extensive restructuring** over the last 24 months with a now **profitable operating trauma business (EBITDA recurring)**
- 2 **Scale up company** striving for accelerated and profitable growth with significantly improved bottom-line; **doubling sales (> € 20m) and positive net cash-flow in 2023**
- 3 **Pure player** in high innovation **trauma** (orthopedic fixation) with a differentiated and broad high-quality product portfolio - **LOQTEQ®**
- 4 Front runner in **antibacterial silver coating technology** that dramatically reduces surgical site infections (SSI); **Game-changer** for *aap's* product portfolio and platform technology for the industry worldwide (e. g. pacemakers, hips, nails, dental etc.)
- 5 **Exciting investment opportunity** in a highly innovative and **clearly undervalued** Medtech company (EV/ sales FY 21e: 1.1) with great value creation potential

## aap at a glance

### Organisation

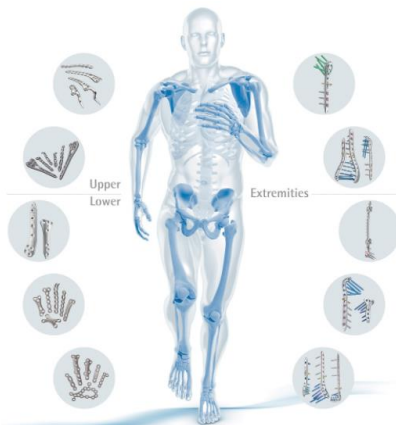
- Globally operating medical device company based in Germany
- Founded in 1990
- 111 Employees (30/06/2021)
- Distribution:
  - Germany: Direct to hospitals, buying syndicates and hospital groups
  - International: Broad network of distributors in about 25 countries
  - USA: Direct sales via distribution agents and B2B partnerships with global orthopedic companies

### Technologies



3 innovative and IP-protected platform technologies addressing unmet needs and challenges in trauma

### Highly functional and broad trauma portfolio



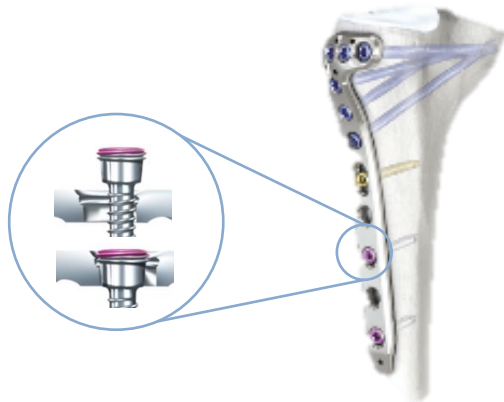
### World-class certified production and processes



# Innovative and game-changing product portfolio

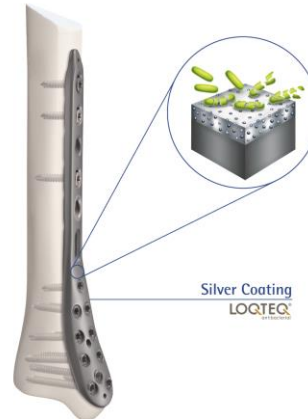
## Unmet need: Simplify operation techniques

**Our answer:** Comprehensive portfolio with patented unique screw-plate locking technology with great expansion potential and 10 years proven clinical track record



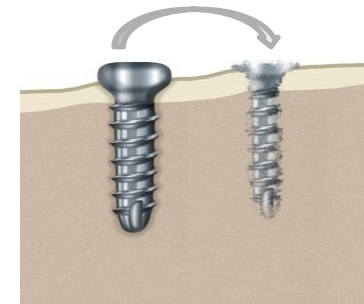
## Unmet need: Reduce surgical site infections (SSI)

**Our answer:** Unique patented Silver coating technology (under development, clinical trial in preparation) preventing bacterial colonization on trauma implants with excellent biocompatibility, high stability and antibacterial efficacy results



## Unmet need: Avoidance of second operation (explantation)

**Our answer:** Unique patented magnesium alloy and coating technology (in R&D phase) with a wide range of applications (e.g. extremity and facial surgery, sports medicine or pediatrics)



➡ **Platform Technologies addressing unmet needs in trauma**

# *aap* stock clearly undervalued in peer group comparison



**FY/2021 (E)**

- EV/Sales: 1.1
- EV/EBITDA: <0



**Small & Mid Cap Peers**

 <b>GLOBUS</b> MEDICAL	<b>FY/2021 (E)</b> ➤ EV/Sales: 7.1 ➤ EV/EBITDA: 21.0
<b>medartis®</b> <small>PRECISION IN FIXATION</small>	<b>FY/2021 (E)</b> ➤ EV/Sales: 6.6 ➤ EV/EBITDA: 38.3
	<b>FY/2021 (E)</b> ➤ EV/Sales: 6.7 ➤ EV/EBITDA: 22.5

→ EV multiples indicate huge upside potential of *aap* stock, especially against:

- Company has been successfully restructured and is in a turnaround situation and
- Significant upside potential by its two game-changing technologies antibacterial silver coating and resorbable magnesium implants

# New management team driving transformation

## Rubino Di Girolamo CEO



*CEO since 2019*

- Since 2004 as investor and Board Member with *aap*
- Long-standing experience in different top management positions e.g. at Metalor Dental Holding AG, Bellevue Group and Saurer Group
- Graduation (M.A.) in Economics at Zürcher Hochschule für Angewandte Wissenschaften (ZHAW)

## Agnieszka Mierzejewska COO



*COO since 2021*

- Since 2014 with *aap*
- Working in different operational positions for medical device & patient care companies e.g. Vanguard AG
- M.A. in Health Economics and Health Management at Fresenius Univ. Cologne

## Marek Hahn CFO

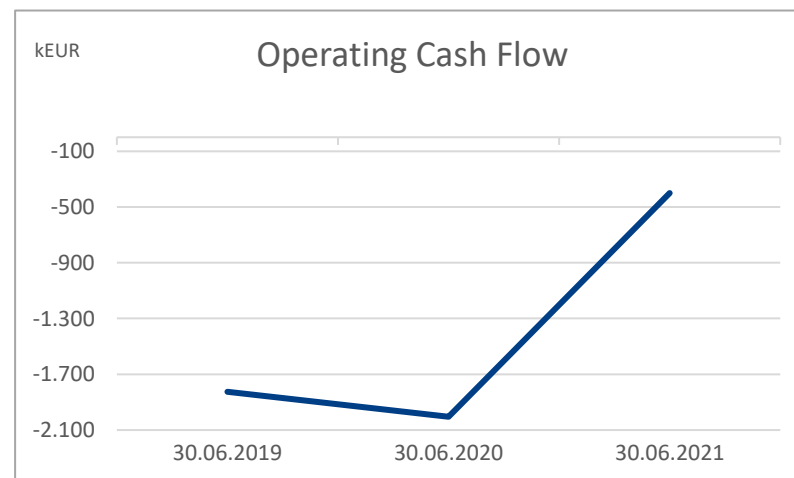
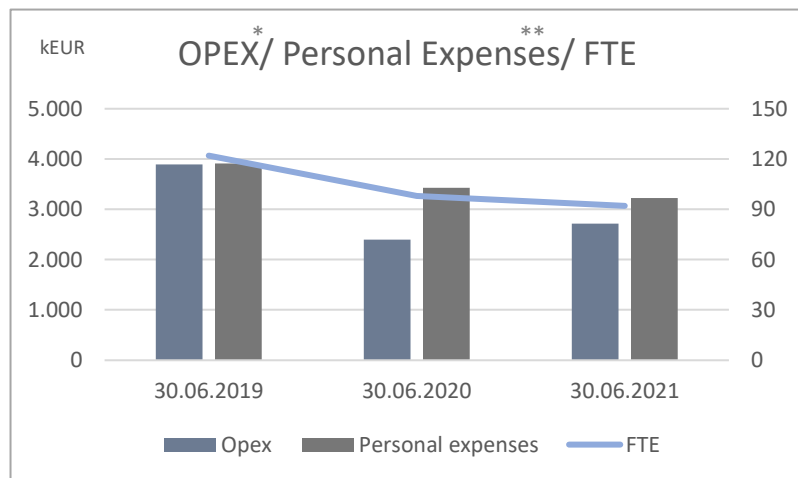
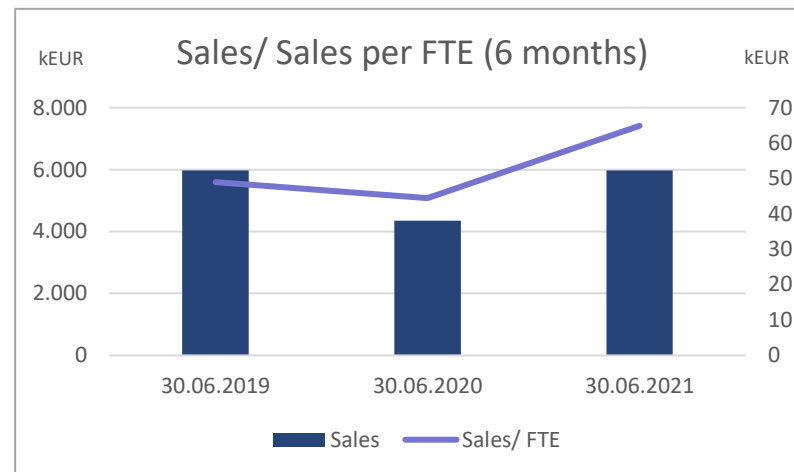
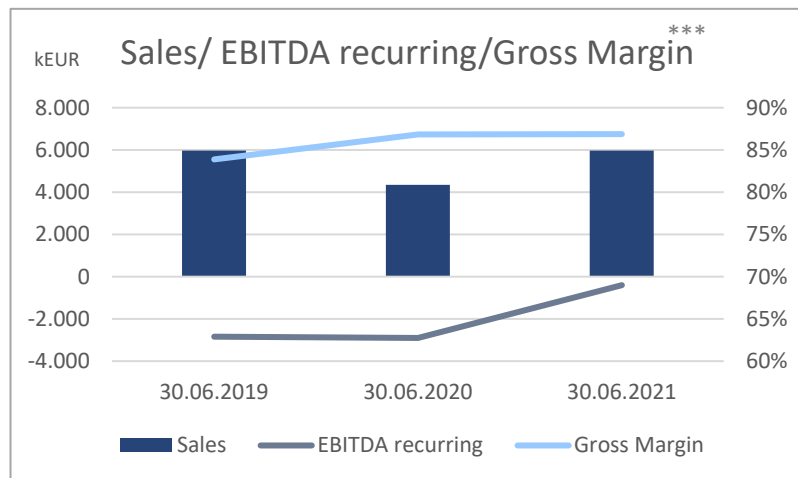


*CFO since 2010*

- Since 2007 with *aap*
- Prior to *aap* several years for KPMG Deutsche Treuhandgesellschaft AG in various national and international positions
- Graduation (M.A.) in Economics at Technische Universität (TU) Berlin



# Visible restructuring successes in the last 24 Months



\* Excluding restructuring and refinancing costs as well as one-time expenses in connection with the revision of the QM system.

\*\* Excluding restructuring expenses.

\*\*\* Relating to sales revenues, changes in inventories of finished and unfinished products and cost of materials / purchased services.

## *aap* underwent extensive restructuring

### Operational and sales issues before

- Lack of investments in product renewal and sales channel management
- Incorrect assessment in regulatory approval processes for LOQTEQ® portfolio and in silver coating technology
- High fix costs due to large overhead, lack of stringent project management and lack of cost management culture
- Excess capacity leading to high asset immobilization, low utilization and adding to high costs
- Large outdated standard trauma portfolio

Transformation

Program

### Efficient and poised for growth

- Continuous improvement of portfolio
- Strong focus on developing and managing sales channels
- Lower run-rate for *aap*:
  - Improved GM\* (80% → 84% year-on-year FY/2020)
  - Savings of ~€ 1.6m in yearly personnel costs (year-on-year FY/2020)
  - Savings of ~€ 1.6m in yearly other operating expenses (year-on-year FY/2020)
- Clear path forward for silver coating and resorbable magnesium implant technologies and stringent management of roadmap for LOQTEQ®
- Renewed management and strong performance culture

 **Restructuring successes clearly visible on full-year basis (FY/ 2020) with even more impact on H1/2021 results**

\*Relating to sales revenues, changes in inventories of finished and unfinished products and cost of materials / purchased services.

# Key strategic directions

## Corporate agenda

- Secure financing to continue investing in LOQTEQ® portfolio and Silver and bridge the gap until the company is generating cash
- Seek partnerships for further investing in silver R&D in adjacent (non-competitive) implant areas
- Expand magnesium roadmap if partnerships and financing can be guaranteed – so far optional in the business case

## Sales & Operations

- Leverage recent portfolio extensions (foot, tibia/fibula, elbow) to boost sales, in particular in the US with the recent FDA approvals and extend to other markets as soon as CE approval is through. Going forward, apply stringent channel management with constant prioritization, marketing support, sales argumentation and technical training
- Continue seeking continuous improvement in production by standardized processes and realizing cost saving potential
- Seek to improve capacity load and scale in operations by selectively offering OEM services for trauma components. Evaluate potential partnerships for manufacturing – already started, among others, with Chinese companies

## R&D and Products

aap Implantate AG – confidential

- Continue complementing and improving LOQTEQ® portfolio to be the best alternative against the majors and thereby strengthening *aap*'s position in the markets we're acting in.
- Continue with human clinical study and approval process for silver coating technology to provide a ground-breaking competitive advantage to the LOQTEQ® portfolio. In parallel exploit partnerships for non-competitive areas (e.g. pacemakers, hips and nails).
- Continue development of resorbable magnesium implant technology if separate funding for that opportunity can be found via a co-investor or a favourable collaboration. Selling of the technology is also an option if an attractive offers appear to finance LOQTEQ® and Silver

# aap cash needs and your investment opportunity

## Financing needs

### LOQTEQ®

- LOQTEQ® set investments to grow sales in direct US business
- Portfolio expansion and product launches
- Invest in efficiency measures to lower manufacturing costs (e.g. automation in production, process digitalization)

### Silver technology

- Net financing need for conducting human clinical trial study (after funding by BMBF)
- Finalize regulatory pathway to CE submission

### Repayments

- Pay back bridge financing
- Reduce financial costs

Total of  
€ 5m - 6m

## Your Chance

- The Company is poised to grow significantly in its core business
- Massive upsides stemming from the silver coating technology (USP)
- A planned public share capital increase for existing shareholders, gives the opportunity to acquire a large participation
- Specific aspects (board seat, etc.) of a larger shareholding are to be discussed

Magnesium technology: search of specific partnerships and/or investors or sales

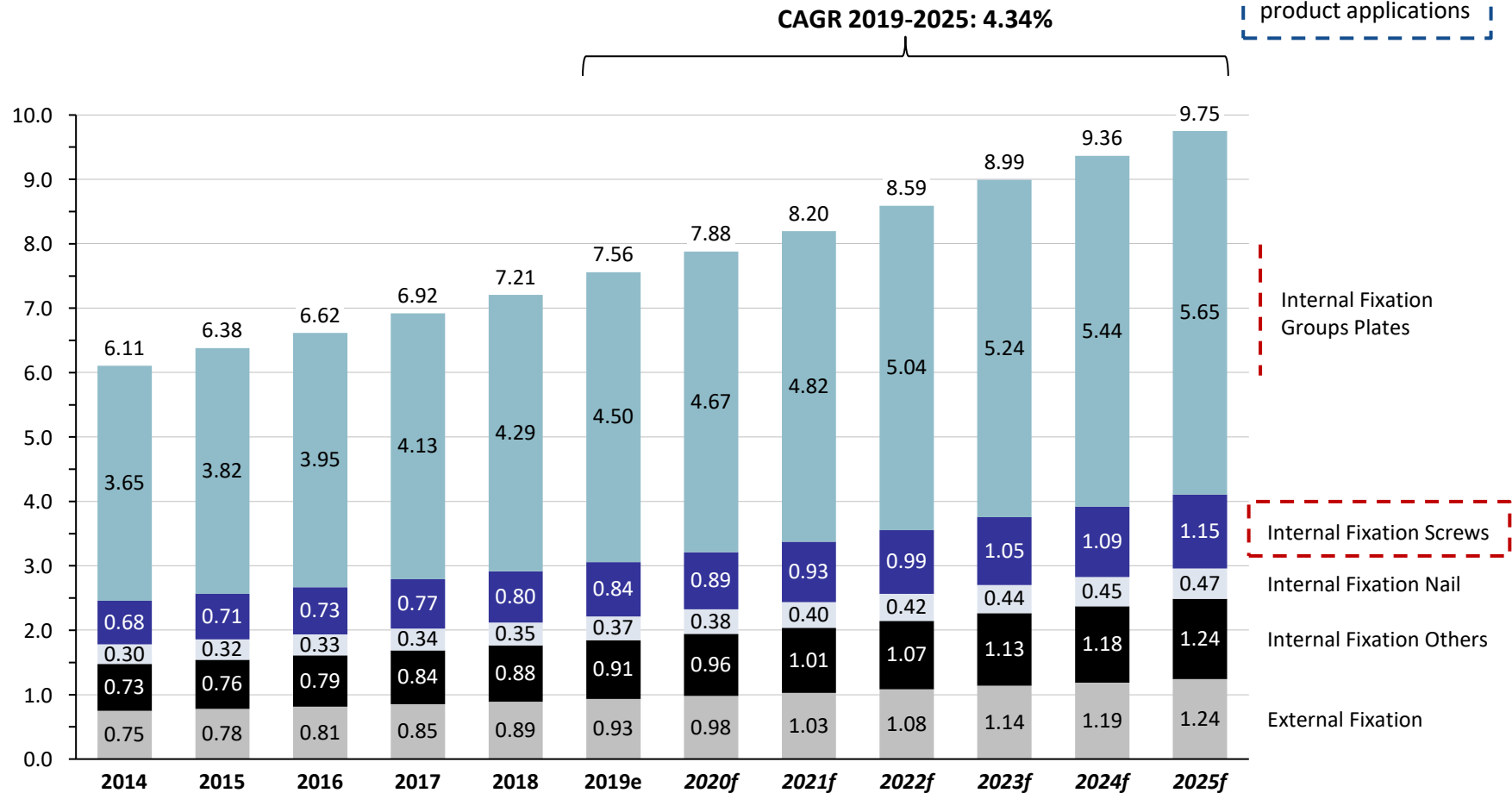
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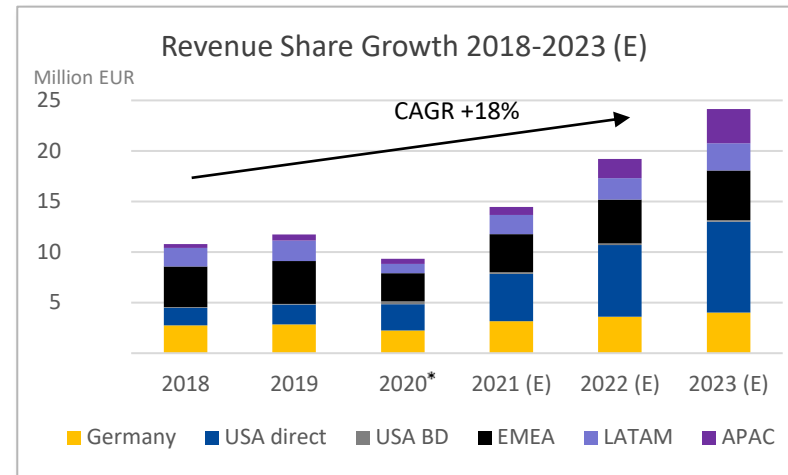
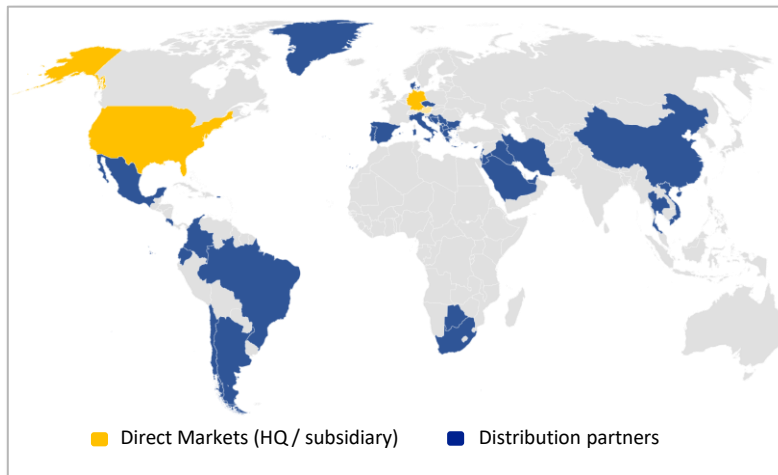
# Global trauma fixation market with healthy growth >4% CAGR

## Global Trauma Fixation Device Market: Revenue by Type

bn USD, 2014-2020f



## Revenue share growth 2018 – 2023 (E)



- ✓ **Growth overall +18% well above projected market CAGR** of global trauma upper and lower extremities at ~4% - ~7%\*\*
- ✓ **Direct US Business:** to grow from 16% to 40% revenue share from 2018 – 2023 (E)
- ✓ **APAC:** revived Chinese business, growing Thailand business and new distributors in e.g. Vietnam and Singapore to continue to grow to 15% revenue share by 2023 (E)
- ✓ **LATAM:** solid at ~10% revenue share potential further growth planned through further product registration (foot & calcaneus) as well closing regional gaps through new distributors
- ✓ **EMEA:** with stronger market penetration to sustain solid sales, further expansion with new products and sterile portfolio

\*Impact COVID-19 on business operations due to lock-down periods.

\*\*Global Trauma Fixation Device Market Insights, Forecast to 2025, page 15.

## *aap* has a strong customer retention

### Customer Retention as of 30.06.2021

### Observations



75% of customers stay with *aap*  
> 5 years

Direct sales to clinics via large  
purchasing organizations



43% of customers stay with *aap*  
> 2 years

Sales to distributors – recent  
pruning of portfolio leading to  
lower indicator



56% of customers stay with *aap*  
> 5 years

Mix of direct sales and  
distributors

### Action plan

- Increased training and sales argumentation
- Broadened portfolio of products actually facilitating winning of new customers (and also helping customer retention as portfolio has become more attractive)



# International and national registrations

## CE (Europe)

✓ **ISO 13485:2016** valid until 02/2024

MDD incl. product cert. valid until 05/2024

## FDA (USA)

✓ **510(k)** clearances

Currently greater portfolio in the US,  
no restrictions so far after last audit 11/2019

## International

✓ **NMPA (China)**

➤ 8 certificates in China

✓ **ANVISA (Brazil)**

➤ Registration valid until 04/2025 resp. 01/2026 depending on product group  
➤ Registration of further product groups (i.e. VA Tib/Fib and Foot) started in 2021

✓ **SFDA (Saudi Arabia)**

➤ All CE products registered as of beginning of 2021 with SFDA

✓ **Southeast Asia**

➤ Completing portfolio in Thailand with VA Tib/Fib and Foot/Calcaneus starting in Q3/2021  
➤ New: Starting registration in Singapore and Vietnam in Q3/2021

Other international registrations assigned where distributors are active

 **aap's product portfolio approved in core and emerging markets**

# Trends shaping the trauma market



## MDR regulation

- EU introduced new medical device regulation in May 2021.
- Besides changes in process and documentation (which lead to slightly higher costs), for implant products a clinical study needs to be performed prior to certification, which slows down the certification process by around 2-3 months. Still, overall *aap* is well prepared for the transition and elements are in place to respond to MDR.

**Impact:** Slow-down favouring incumbents in the starting phase but no major impact anticipated for *aap*.



## Minimization of # of surgeries and surgery time

- General trend towards minimizing # of surgeries and surgery time given cost pressure in health system but also to avoid infections in general and with the rising incidence of multi-resistant bacteria in particular.
- Movement towards resorbable implants, in particular for small and mini-fragments to avoid explantation surgeries.

**Impact:** Latent market demand for resorbable implants, which *aap* has in its pipeline.



## Minimization of post-operative complications

- Minimally invasive surgeries (MIS) to minimize area of damaged tissue exposed to external environment.
- Smart sterile packaging solution (for cannulated screws already available).
- Implants with anti-bacterial action.

**Impact:** Demand for sterile packaging and anti-bacterial coatings (e.g. silver). The latter *aap* has in its pipeline.

# What clinics typically want when purchasing implants

## Quality and functionality

- Quality has different dimension (e.g. strength, surface structure, bio-compatibility, no cold welding when tightening screws etc.) but while it is still an absolute must, it's fair to say that many suppliers do fulfil the basic quality criteria today.
- Functionality is therefore an increasingly relevant criterion – e.g. the number of screws to fix a plate or the way to tighten it and thereby simultaneously fulfill compression and fixation influences quality and in time of the surgical intervention which impacts the economics of the clinic.

⇒ *aap* excellently positioned given its innovative and high-quality plate and screw systems.

## Portfolio breadth

- Given that screws and plates of different suppliers do not fit together a clinic typically purchases one or very few systems from vendors in order to minimize complexity and the time needed to train surgery teams to use the systems.
- Breadth of portfolio is therefore a key decision criterion which favours large incumbents covering all components. Still, there remain specialists with niche portfolios (e.g. Paragon 28 for foot and ankle joint)

⇒ *aap* covering 90% of major trauma indications but still has certain gaps in the portfolio which are being addressed.

## Consignment stock

- Industry standard is to provide fully equipped trays with implants to clinics / hospitals in consignment. The customer only pays used implants as trays are replenished.
- Provision of consignment stock is a significant burden impacting working capital and thereby favouring financially strong companies.

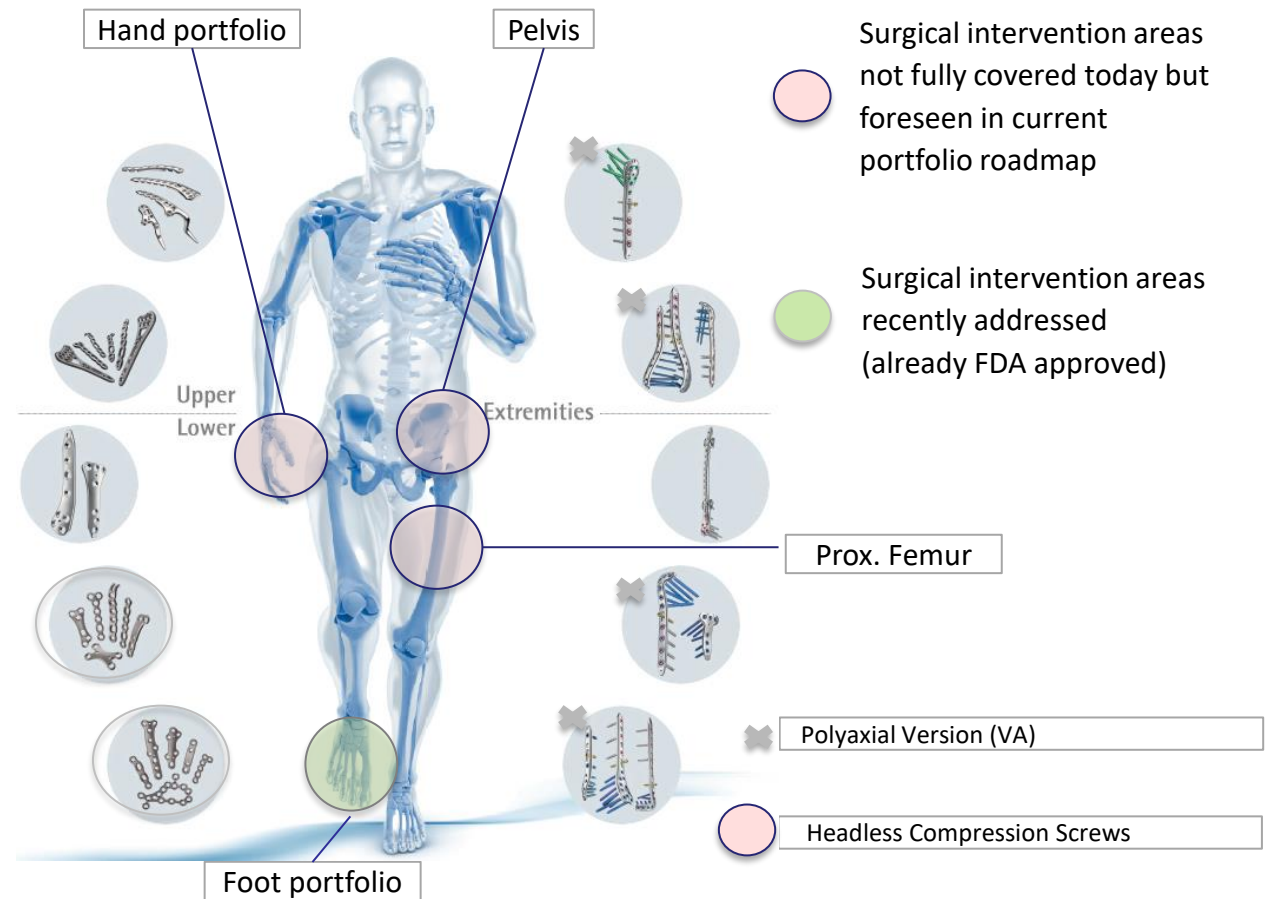
⇒ Part of the business model and one of the reasons why *aap* is seeking further capitalization.

# Differentiated and broad *aap* LOQTEQ® trauma portfolio

## Plating System



## Cannulated Screws

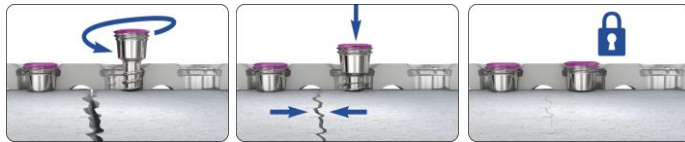


➡ ***aap* portfolio covers today >90% of major trauma indications but still contains gaps which are currently being addressed**

# LOQTEQ® technology has tangible benefits for surgeons...

## Technology

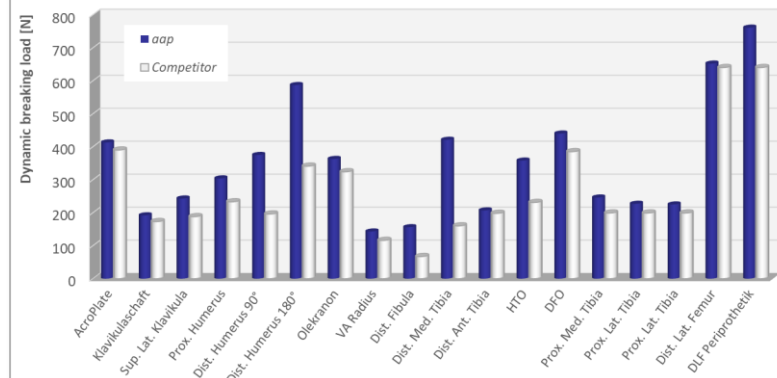
### One Hole One Screw One Step



- ✓ **Fracture compression and angular stability in one surgical step**
- ✓ **High stability** through the combination of two fixation principles
  - Cone connection
  - Circumferential thread
- ✓ **Easy explantation** - no cold welding\*
- ✓ **Anatomical design** with optimized fit and predetermined screw angles for improved fracture fixation
- ✓ **Locking & compression** holes in plate shaft
- ✓ **Minor contact undercuts** for minimized contact to the bone to preserve periosteal blood supply
- ✓ **Polished surface** to reduce the bone ingrowth
- ✓ **K-wire holes** for preliminary fixation
- ✓ **Oblong holes** to adjust the placement of the plate
- ✓ **Tapered plate shaft** for subcutaneous insertion

## Key Achievements

- ✓ **Unique technology** with comprehensive patent protection
- ✓ **4 superior patent families** that place strong demands on the design and fixation technology of the LOQTEQ® system
- ✓ Locking & Compression in **ONE** step
- ✓ Coverage of the most common fracture patterns, including elective surgery and periprosthetic fractures
- ✓ LOQTEQ® products with approvals for national and international core and emerging markets (CE, FDA, NMPA, ANVISA etc.)
- ✓ **Superior biomechanical properties\*\*** compared to the market



\*Please refer to biomechanical study „Locking design affects the jamming of screws in locking plates“, Injury, Int. J. Care Injured 49S1 (2018) S61–S65.

\*\*Biomechanical tests with the Institute of Biomechanics of the BG Clinic Murnau.

# Road to success in trauma business

## Key Drivers:

## Goals:

**Operational leverage**



- ✓ **Continuous improvement of gross margin** through operational efficiency programs and economies of scale
- ✓ **Sustainable and profitable EBITDA growth** in trauma

**Strong focus** on developing and managing **sales channels**



- ✓ **Accelerating top-line growth** with LOQTEQ® > 20Mio EUR by 2023ff
- ✓ Further **intl. registration coverage and distribution** with focus on fast growing markets (e.g. US, SEA)
- ✓ **Strong emphasis** on training and market penetration

**Renewed management and performance culture**



- ✓ **Efficient and competent** organizational excellence
- ✓ Culture of performance and quality

**Continuous product & portfolio development**



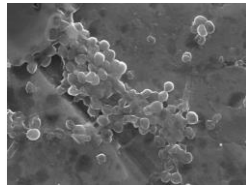
- ✓ **Expansion of IP-protected** platform technology LOQTEQ® to **complete full trauma range**
- ✓ Launch **LOQTEQ® antibacterial product line** with **unique portfolio position** in trauma

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# “Game-Changer” for medical device industry

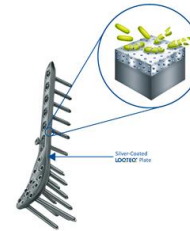
## Unmet Need



Biofilm formed on an TiAl6V4 implant surface

- **Healthcare-associated infections (HAI)** are one of the major challenges in medicine
- **3.2 million people** are estimated to receive an infection diagnosis **every year in Europe**, of whom approximately **37,000 become fatal\***
- leads to **16 million extra-days** of hospital stay, and an **annual cost** of approximately **€ 7 billion** across Europe\*\*
- In **orthopedic trauma**, it has been estimated that up to 30 % of cases may result in infection\*\*\*

## Our Response



### Antibacterial Silver Coating by aap

- ✓ **Pioneer** in the development of an **antibacterial silver coating** technology for trauma implants
- ✓ Platform technology with **wide potential applications** (cardiology, orthopedics, etc.)
- ✓ Stable coating with **high antibacterial efficacy and biocompatibility**
- ✓ **Cost-effective** coating technology
- ✓ **Approval** for worldwide first clinical study
- ✓ **Strong and comprehensive patent** portfolio
- ✓ **Enormous market potential**

\*European Centre for Disease Prevention and Control, Economic evaluations of interventions to prevent healthcare-associated infections – Literature review. Stockholm: ECDC, 2017.

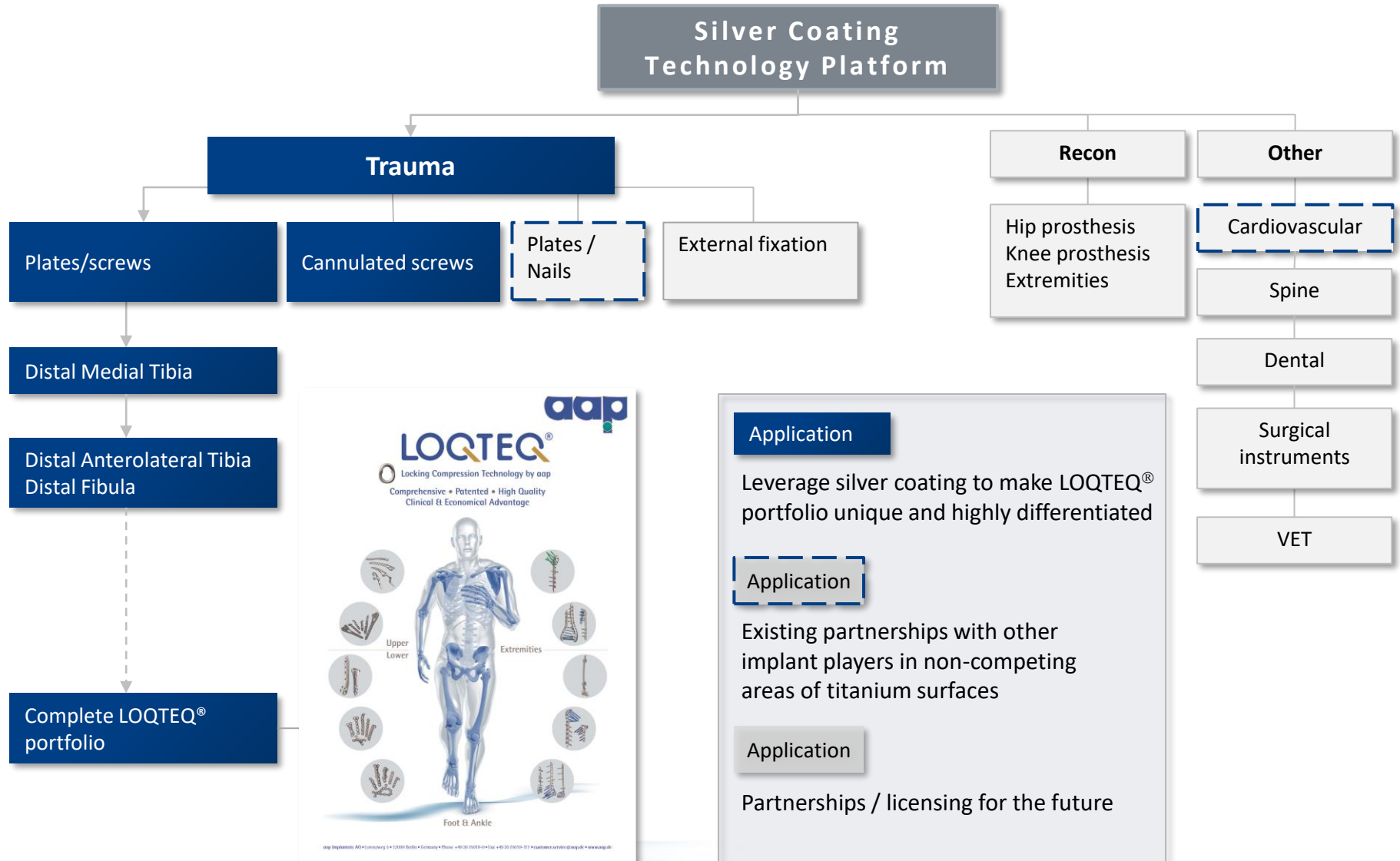
\*\*World Health Organization, Report on the Burden of Endemic Health Care-Associated Infection Worldwide - Clean Care is Safer Care. WHO 2011.

\*\*\*Schwarz et al., 2018 International Consensus Meeting on Musculoskeletal Infection: Research Priorities from the General Assembly Questions.

Journal of Orthopaedic Research 37(5): 997-1006, 2019.



# Application potential



## Value creation path

### Silver coated plates and screws

***Clinical investigation of silver-coated plates and screws for traumatological treatment.***



### Silver coated nails

***Feasibility study for silver coated plates and nails of a world leading medical device company.***



### Silver coated pacemaker housing

***Feasibility study for silver coated pacemaker housings of a world leading medical company for cardiovascular treatment.***



## LOQTEQ<sup>®</sup> antibacterial Investigator initiated trial (IIT)/ compassionate use

### Investigator Initiated Trial

- **Prof. Dr. Dr. Volker Alt** (Chair and director for trauma surgery, University Hospital Regensburg)
  - **Subject:** Silver-coated plates to reduce the rate of bone infections
  - Prospective, measurement of silver concentration in blood, clinical and radiological follow-up
  - Start of trial end of May, enrolment of 1st patient
  - **Clinical Outcome:** excellent healing process without infection; rapidly decreased inflammation values; problem-free and complete wound healing, very low silver concentration in blood

### Compassionate Use Cases

- **Prof. Dr. Dr. Volker Alt** (Chair and director for trauma surgery, University Hospital Regensburg)
  - Silver-coated humerus plates
  - **Clinical Outcome:** excellent healing process despite complicated fracture, preventing amputation
- **Dr. med. Burchard** (Head of the Department, Trauma Surgery and Orthopedics, Dill-Kliniken)
  - Silver-coated tibia plates; proximal tibial corrective osteotomy
  - **Clinical Outcome:** Wound healing per primam; healing process excellent, inflammation values within normal range, X-ray without findings

## LOQTEQ<sup>®</sup> Market study – Human Clinical Trial

### Clinical Need

- **Surgical treatment** of distal tibia fractures is associated with **high rate of post-operative complications** (infection rates of 6-19%\*)
- Silver-coated plate is designed to **prevent bacterial colonization** on implant surface

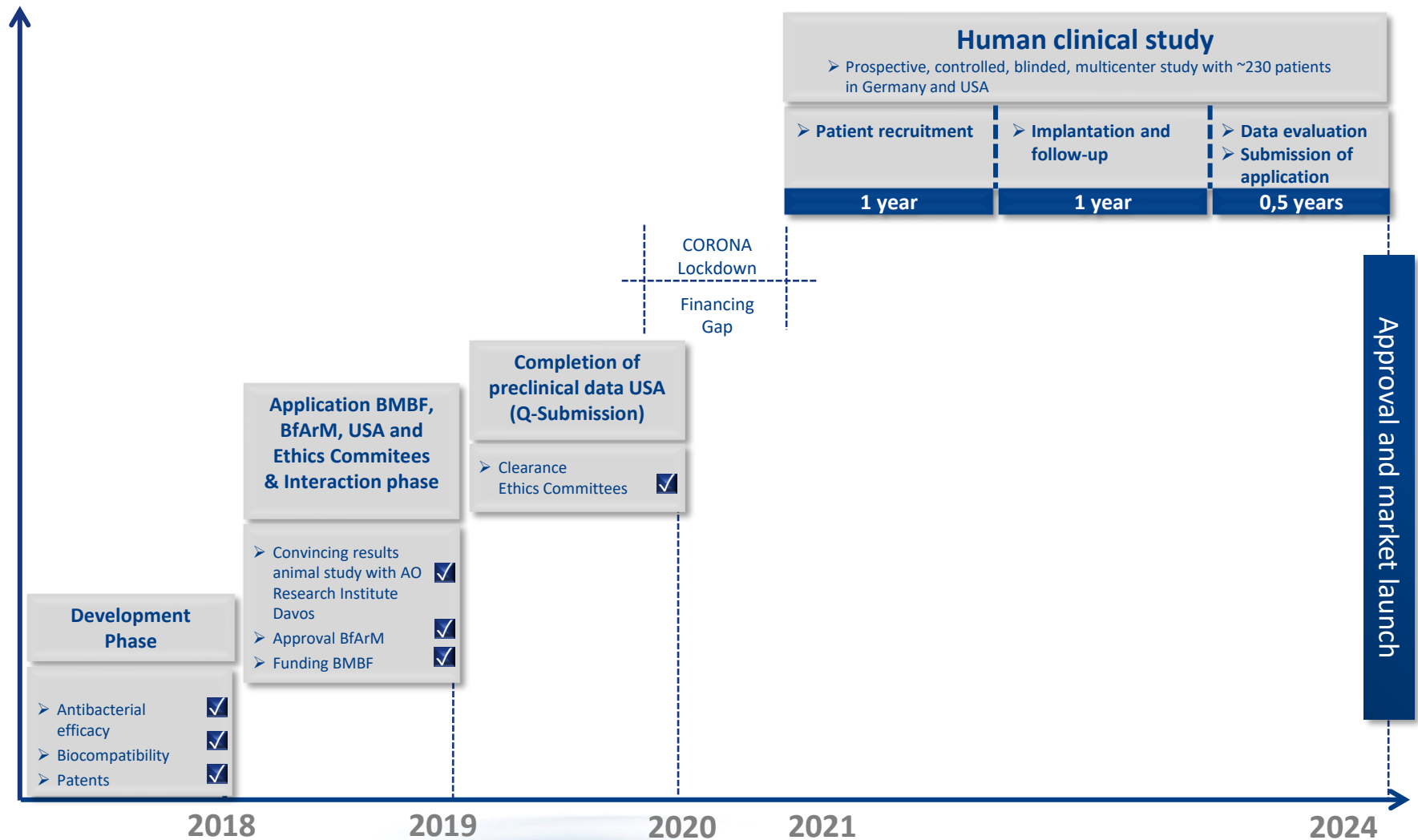


### Study Objectives

- To show the **safety** of the **LOQTEQ<sup>®</sup> antibacterial silver-coated system** is non-inferior in comparison with the uncoated LOQTEQ<sup>®</sup> system
- To show the **clinical benefit** of the LOQTEQ<sup>®</sup> antibacterial silver-coated system in comparison with the uncoated LOQTEQ<sup>®</sup> system
- To recruit 226 patients in ~1 year followed by 12 months follow-up
- To **support** regulatory **approval** processes in **Europe** and **USA**

\*1 White et al. , J Orthop Trauma, 2010.

# Regulatory pathway – milestones\*

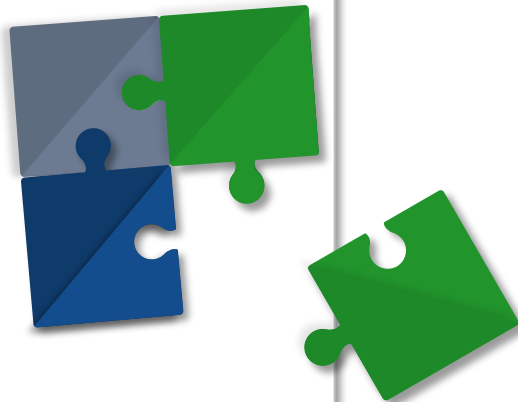


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# Resorbable magnesium screws with clear economic benefits

*New Age:*



**Avoid second operations and shorten the follow up duration**

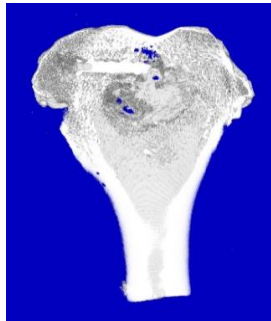
## **Resorbable Magnesium Implants by aap**

- ✓ Innovative degradable product avoids a second surgery and results in a much shorter follow-up (control intervals for the healing process) due to its degradation and new bone formation for up to one-year healing process.
- ✓ Minimal surgery time required to perform a one-time short surgery. Future implants are aimed for essential human mobility of foot and hands.
- ✓ Successful non-GLP study performed at Colorado State University (CSU).
- ✓ Broad patent protection in place.
- ✓ Typical application is screws in the small and micro-fracture market.
- ✓ FDA granted “DeNovo” pathway. Assesses the technology as likely to meet definition of “novel technology”, which is a strategic benefit. According to the FDA, up to date there is no existing predicate which can answer a metal degradation need.
- ✓ *aap* plans to partner with leading US medical companies to co-finance a GLP study at CSU.

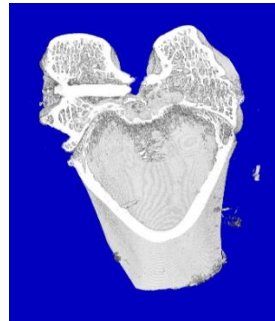
 **Highly innovative technology also with game-changing potential**

# Pilot non-GLP animal study in the US indicates superiority of technology

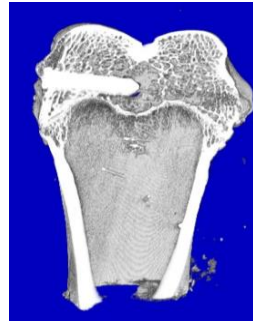
## MicroCT Analysis after 6 weeks



Coated  
Magnesium Pin



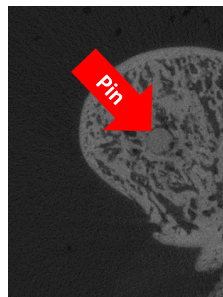
Un-coated  
Magnesium Pin



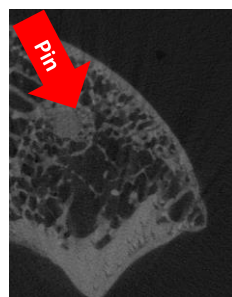
Titanium Pin

- ✓ Good bone contact and no significant gas formation

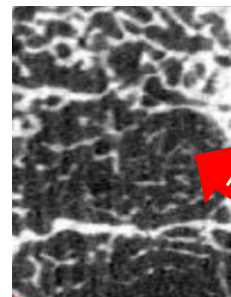
## MicroCT Analysis after 6, 12, 24 weeks



Coated Magnesium  
Pin after 6 weeks



Coated Magnesium  
Pin after 12 weeks

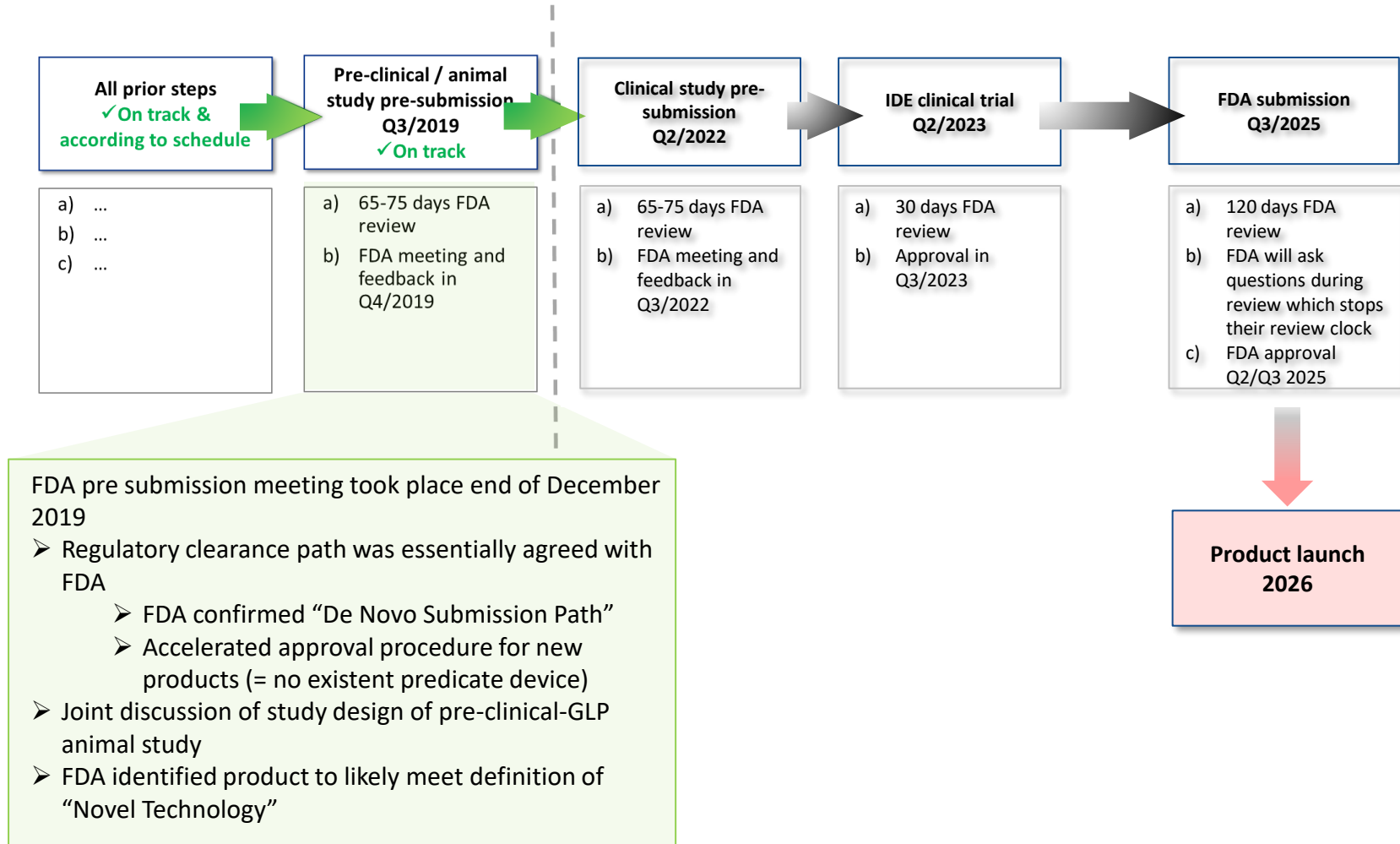


Coated Magnesium  
Pin after 24 weeks

- ✓ After 6 weeks: Good bone contact and no significant gas formation
- ✓ After 12 weeks: Good bone contact and no significant gas formation
- ✓ After 24 weeks: Controllable resorption process and good bone growth ("proof of concept")



# Product launch for resorbable magnesium could happen in 2026



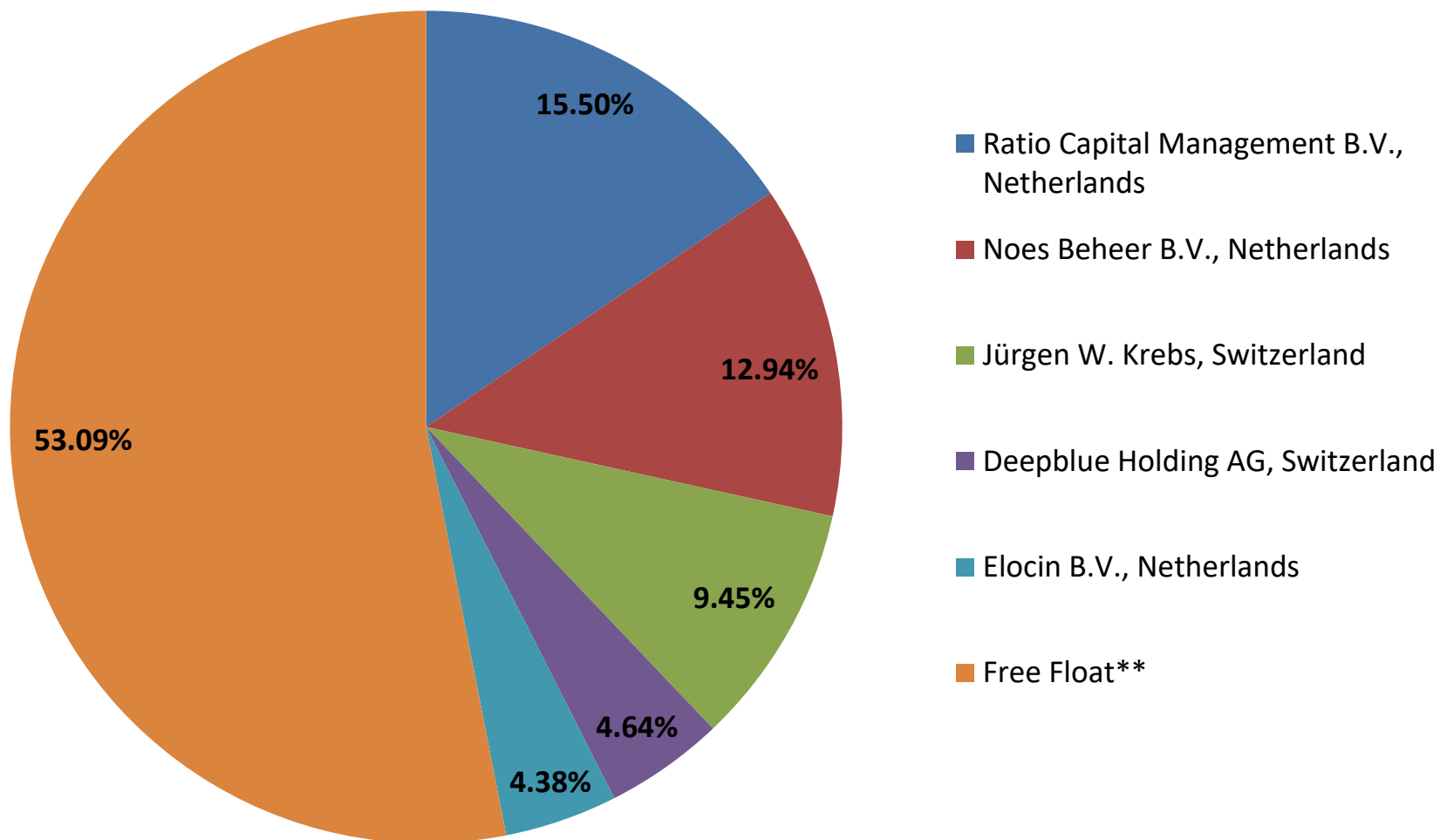
## Investment opportunity – your chance

### Participation in **subscription right capital increase**

- ✓ Enabling *aap* to **build sustainable and profitable trauma business** with > €20m sales and positive net cash-flow in 2023
- ✓ Enabling *aap* to **become European trauma player** by expanding product portfolio and markets
- ✓ Enabling *aap* to **unlock the significant value potential** of its **game changing Silver coating technology**
- ✓ **Key data:** Total volume of up to 1,500,000 new shares, subscription ratio of 2.3189:1 (old shares / new shares), subscription price of EUR 3.30 (attractive discount), subscription period from 4 October to 18 October 2021, subsequent private (rump) placement to new investors

➡ **Become part of an exciting investment opportunity at an attractive price level (EV/ sales FY 21e: 1.1) with great value creation potential**

## Attachment (1/2) – Shareholder Structure\*



\* Shareholdings in aap Implantate AG ≥ 3% as of 23.09.2021, according to our information.

\*\* According to German Stock Exchange.

## Attachment (2/2) – P&L H1/2021

	Profit & Loss Statement <i>aap</i> Group			
kEUR	H1/2021	H1/2020	Diff	Diff %
<b>Sales</b>	<b>5.970</b>	<b>4.353</b>	<b>1.617</b>	<b>37%</b>
Changes in inventories	158	-1.582	1.740	110%
Other own work capitalized	72	36	36	101%
<b>Total revenues ex grants</b>	<b>6.200</b>	<b>2.807</b>	<b>3.392</b>	<b>121%</b>
Other operating income	861	468	393	84%
Cost of purchased materials and services	-803	-365	-438	-120%
Gross Margin in%	87%	87%	0%	
Personnel expenses	-3.226	-3.898	673	17%
in % of total revenues	-52%	-139%	87%	
Other operating expenses	-2.946	-3.344	398	12%
<b>EBITDA</b>	<b>86</b>	<b>-4.331</b>	<b>4.417</b>	<b>102%</b>
Depreciation	-894	-1.806	913	51%
<b>EBIT</b>	<b>-808</b>	<b>-6.138</b>	<b>5.330</b>	<b>87%</b>
Financial result	-462	-25	-437	-1769%
<b>EBT</b>	<b>-1.270</b>	<b>-6.162</b>	<b>4.893</b>	<b>79%</b>
Taxes on income	1		1	
<b>Net income/net loss</b>	<b>-1.269</b>	<b>-6.162</b>	<b>4.894</b>	<b>79%</b>

# Key abbreviations

Abbreviation	Description
3D	three-dimensional
<i>aap</i>	<i>aap</i> implantate AG
Ag	Argentum (silver)
ANVISA	Regulatory body for medical devices in Brazil
B2B	Business to business
BfArM	Das Bundesinstitut für Arzneimittel und Medizinprodukte
BMBF	Bundesministerium für Bildung und Forschung
bn	billion
BRIC	Brasil, Russia, India, China
BU	Business unit
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenses
CE	Conformity marking of European Union
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CFR	Code of Federal Regulations (US)
COO	Chief Operating Officer
CSU	Colorado State University
CT	Computer tomography
CTO	Chief Technology Officer
DANN	Deoxyribonucleic acid
DE	Germany (Deutschland)
DTO	Distal Femoral Osteotomy
e / E	estimate
EBITDA	Earnings before interest, taxes, depreciation and amortization
f	forecast
FDA	Federal Drug Administration
FTE	Full time equivalent
FY	Financial year
GLP	Good laboratory practice
GM	Gross margin
HA	Hydroxyapatite
HTO	High tibial osteotomy

Abbreviation	Description
HY	Half-year
IP	Intellectual Property
ISO	International Standards Organization
k	kilo (thousand)
KPI	Key performane integator
K-wire	Kirschner wire
Log	Logarithm
MDR	Medical device regulation
Mg	Magnesium
m	Million
MIS	Minimally invasive surgery
NMPA	Regulatory body for medical devices in China
OD	Overdose
OPEX	Operational expenditure
PEO	Plasma electrolytic oxidation
PEO	Plasma Electrolytic Oxidation (PEO) process
Q1	Quarter 1 (January - March)
QM	Quality managment
R&D	Research and development
ROI	Return on investment
RoW	Rest of world
SG&A	Selling, general and administrative expense
SMIT	South Korea, Mexico, Indonesia and Turkey
SSI	surgical site infections
USD	US Dollar
VA	Variable angle
VET	Veterinary
w/o	Without
y, yr	year
YE	Year-end
ZMX	Mg-Zn-Mn Alloys
Zn	Zinc

## Disclaimer

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*aap: 30 years of...*



***...and continuing committed to innovation***



## **aap Implantate AG**

Lorenzweg 5  
12099 Berlin, Germany  
Phone: +49 30 75019 - 0  
Fax: +49 30 75019 - 111  
[info@aap.de](mailto:info@aap.de)

### **Rubino Di Girolamo**

#### **Chairman of the Management Board / CEO**

Phone: +49 (0)30 75019 - 170

Mobile: +49 (0)1729756012

Email: [r.digirolamo@aap.de](mailto:r.digirolamo@aap.de)

### **Agnieszka Mierzejewska**

#### **Member of the Management Board/ COO**

Phone: +49 (0)30 75019 - 129

Mobile: +49 (0)1729756004

Email: [a.mierzejewska@aap.de](mailto:a.mierzejewska@aap.de)

### **Marek Hahn**

#### **Member of the Management Board / CFO**

Phone: +49 (0)30 75019 - 178

Mobile: +49 (0)1736292074

Email: [m.hahn@aap.de](mailto:m.hahn@aap.de)