

**STADT MANNHEIM**²Office of Economic
Development**Contact:****Phone** +49 621 293 2155**Mobile** +49 171 307 8906**Email to** elmar.bourdon@mannheim.de**www.mannheim.de/en/medtech**

medical technology cluster

Your Fast Track to Europe

Executive Summary Vascular Device Industry Edition

Located at the core of Europe Mannheim includes a population of approximately 320.000, and its greater metropolitan region a population of 2.4 million.

Mannheim and the region have become one of the Medical Technology and Biotechnology hotspots across Europe.

Learn more about the unique commercial, clinical, skilled labour and research opportunity that the **MANNHEIM medical technology cluster** offers to vascular device companies expanding in Europe, while providing you safety in numbers.

www.mannheim.de/en/medtech

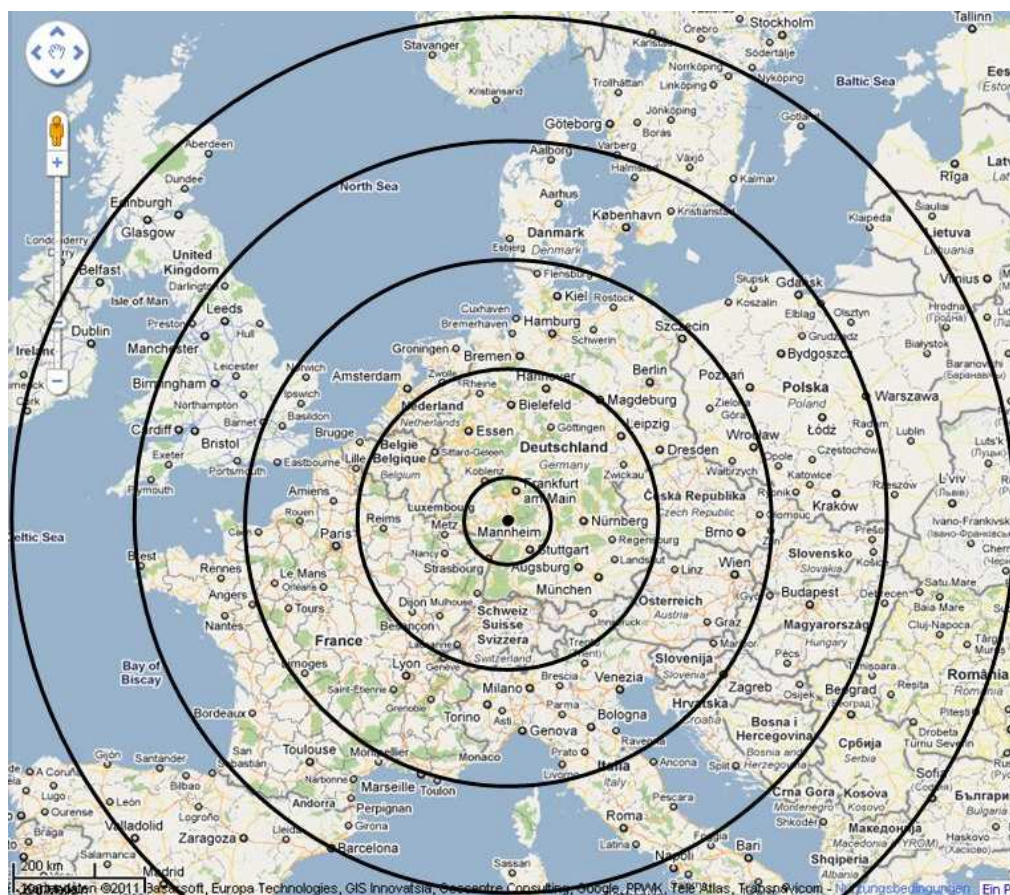
GET CONNECTED

Your fast track to get connected with EMEA, US, ASPAC and ROW

People buy from people. Being able to easily visit your customers, business partners or affiliates for personal meetings is a key to your success. Located at the core of Europe the **MANNHEIM medical technology cluster** provides an optimal hub for time-saving and efficient business travel.

Mannheim Main Station includes one of the most frequent ICE high-speed train connections to all major cities every hour. Get e.g. to Munich by rail in 2:58hrs, and get to Paris by rail in just 3:09hrs.

This includes a direct 31-minutes ICE high-speed train connection to Frankfurt Airport Terminal 1, a worldwide hub for direct flights to EMEA, US, ASPAC and ROW destinations.



Source: Google

<http://maps.google.de/maps?hl=de&q=europa&safe=active&um=1&ie=UTF-8&sa=N&tab=wl>

COMMERCIAL OPPORTUNITY

The **MANNHEIM medical technology cluster** provides you quick access to a broad environment of medical and vascular device industry partners that help you leverage your own resources and capabilities.

Your fast track to medical and vascular device industry partners and resources

The **MANNHEIM medical technology cluster** provides you access to both, domestic hidden champions and mature world market leaders across a large variety of disease states and medical technologies. Just a one hour car drive away from you.

The following shortlist presents just a sample of companies in Mannheim and 60 miles around.

1stQ	GE Healthcare
Abbott Diagnostics	Geuder Ophthalmology
Admedes Schüssler*	Heraeus Medical
AGA Medical*	ISIS senstronics
ALCOM	Johnson & Johnson DePuy
Angiomed*	Johnson & Johnson LifeScan
Angiopro*	Konplan
Angioslide*	Leica Microsystems CMS
Applied Critical Fluids	LeMaitre*
Atomic Force F&E	LiMedlon
Bausch & Lomb Medical	MAQUET*
Becton Dickinson	Medtronic Eureka*
Bruker AXS	Metecon
Buddeberg	Nestlé Healthcare
C.R. Bard*	OMRON Medizintechnik
CatHi*	Optimed*
Culavis	Orthoclinical Diagnostics
Dammeyer&Selzer	Promega
Datascope MAQUET*	Roche Diagnostics
DeVilbiss Healthcare	Siemens Healthcare
Dentsply Friadent	Sirona
DFine RF Kyphoplasty	Spectra Group
Digital Instruments / Veeco Metrology Group	St. Jude*
Euro Engineering	Terumo*
Ferchau Engineering	Vita Phone
Fresenius Medical	VRmagic
Freudenberg Helix Medical Europe / VistaMed	
Friatec	
Fitage	

*** Vascular Devices**

Your fast track to leading pharmaceutical companies

The **MANNHEIM medical technology cluster** provides you access to mature world market leaders across a large variety of disease states. Just a one hour car drive away from you.

The following shortlist presents just a sample of global pharmaceutical companies in Mannheim and 50 miles around:

Abbott
Archimedes Pharma
Horizon Pharma
Merck
Merck Serono
Pfizer
Reckitt Benckiser
Sanofi Aventis

Your fast track to Simulator Training Centres in Mannheim

Physician training is key to launching vascular devices, and to drive adoption and diffusion of new vascular technologies. The **MANNHEIM medical technology cluster** provides you quick access to simulator centers dedicated to physician training in surgical and transcatheter therapies.

CatHi Cathlab Simulator Training Center (Mannheim City)
Eyesi Surgical Simulator Training Center (Mannheim City)
CardioSkills Cathlab Simulator Training Center (50 miles from downtown Mannheim)

Your fast track to biotechnology resources

Beyond the **MANNHEIM medical technology cluster** the BioRN Biotechnology Cluster is also located in the greater Mannheim metropolitan region. BioRN includes about 80 companies from the field of red biotechnology involved in the development of drugs, biotechnology platforms and diagnostics.

Your fast track to commercial excellence

Financial performance and compliance according to international standards present key metrics for managing your business. Four worldwide leaders in business & strategy consulting run offices in Mannheim City, and provide business consulting, finance, taxation, accounting, and payroll services to you on site.

Ernst & Young
Deloitte
KPMG
PriceWaterhouseCoopers

CLINICAL OPPORTUNITY

Your fast track to University & Major Academic Teaching Vascular Centres and Vascular Key Opinion Leaders

Feedback from clinical routine practice and quick access to key opinion leaders is critical to launching vascular devices, and to drive market penetration. The **MANNHEIM medical technology cluster** provides you access to leading vascular centres and to KOLs.

Your Fast Track to Vascular Centres in Mannheim and 10 miles around

Mannheim University Hospital Vascular Centre (Mannheim City)
 Mannheim-Speyer Diakonie Hospital Vascular Centre (Mannheim City)
 Mannheim Theresien-Hospital & St. Hedwig Clinic Vascular Centre (Mannheim City)
 Klinikum Ludwigshafen Vascular Centre (2 miles)
 Heidelberg University Hospital Vascular Centre (10 miles)

Your Fast Track to Vascular Key Opinion Leaders in Mannheim and 220 miles around LINC Faculty

Klaus Amendt MD, Interv. Angio. (Mannheim City)
 Prof Dittmar Böckler MD, Vasc. Surg. (10 miles)
 Prof Erwin Blessing MD, Interv. Cardio. (10 miles)
 Prof Gerhard Rümenapf MD, Vasc. Surg. (20 miles)
 Prof Peter Huppert MD, Interv. Radio. (32 miles)
 Prof Martin Storck MD, Vasc. Surg. (43 miles)
 Prof Peter Reimer MD, , Interv. Radio. (43 miles)
 Prof Jörn Balzer MD, Interv. Radio. (50 miles)
 Prof Horst Sievert MD, Interv. Cardio. (50 miles)
 Thomas Umscheid MD, Vasc. Surg. (65 miles)
 Prof Thomas Zeller MD, Interv. Angio. (128 miles)
 Prof Jan Brunckwall MD, Vasc. Surg. (150 miles)
 Prof Klaus Matthias MD, , Interv. Radio. (182 miles)
 Prof Dai-Do Do MD, Interv. Angio. (213 miles)
 Prof Hans-Henning Eckstein MD, Vasc. Surg. (219 miles)
 Reza Ghotbi MD, Vasc. Surg. (219 miles)
 Markus Treitl MD, Interv. Radio. (219 miles)

Source: LINC

http://www.leipzig-interventional-course.com/index.php?option=com_content&task=view&id=34&Itemid=42

Your Fast Track to High-Volume Endovascular Centres

within a 150 miles car distance (PTA procedures per year)

Herzzentrum Bad Krozingen, Angiology (4.168)
 Klinikum Offenbach, Radiology & Vasc. Surg. (2.511)
 Gem.-Krankenhaus Bonn, St. Elisabeth, St. Petrus, St. Joh., Radiology & Vasc. Surg. (1.733)
 Klinikum Fürth, Radiology (1.465)
 Klinikum Nürnberg, Radiology (1.422)
 Herz- u. Gefäßklinik Bad Neusdtadt/Saale, Vasc. Surgery (1.266)
 Universitätsklinikum Tübingen, Radiology (1.051)
 Krankenhaus d. barmh. Brüder Trier, Cardiology, Radiology & Vasc. Surg. (1.075)
 Klinikum Stuttgart, Radiology & Vasc. Surgery (992)
 Klinikum Darmstadt, Angiology & Vasc. Surg. (970)
 Frankfurter Diakoniekliniken, Angiology (922)
 Klinikum der J.W. Goethe Univ. Frankfurt, Radiology & Vasc. Surg (902)
 Universitätsklinikum Freiburg, Radiology (881)
 Joh.-Gutenberg-Universität Mainz, Cardiology, Radiology & Vasc. Surg (825)
 Diakonissenkrankenhaus Karlsruhe-Rüppurr, Radiology (882)
 Westpfalz-Klinikum Kaiserslautern/Kusel, Angiology (828)
 Universitätsklinikum Marburg, Radiology & Vasc. Surg. (691)
 Klinikum Ludwigsburg, Vasc. Surg. (647)
 Uniklinik Köln, Radiology (683)
 Fürst-Stirum-Klinik Bruchsal (665)
 Frankfurter Rotkreuz-Kliniken, Cardiology (605)
 Städtisches Klinikum Karlsruhe, Radiology & Vasc. Surgery (602)

Your Fast Track to High-Volume TAA/AAA Repair Centres

within a 150 miles car distance (TAA/AAA procedures per year)

Klinikum Nürnberg, Vasc. Surg. (285)
 Universitätsklinikum Heidelberg, Vasc. Surg. (163)
 Universitätsklinikum Köln, Vasc. Surg. (159)
 Joh.-Gutenberg-Universität Mainz, Cardiac & Vasc. Surg. (151)
 Universitätsklinikum des Saarlandes, Homburg, Cardiac & Vasc. Surg. (168)
 Universitätsklinikum Freiburg, Cardiac & Vasc. Surg. (149)
 Universitätsklinikum Ulm, Cardiac & Vasc. Surg. (138)
 Krankenhaus Porz am Rhein Köln, Vasc. Surg. (130)
 Klinikum Ludwigshafen, Cardiology / Cardiac & Vasc. Surgery (129)
 Universitätsklinikum Bonn, Cardiology / Cardiac & Vasc. Surgery (123)
 Klinikum der J.W. Goethe Univ. Frankfurt, Cardiac & Vasc. Surg. (115)
 Universitätsklinikum Gießen/Marburg, Cardiology / Cardiac & Vasc. Surgery (106)
 Klinikum Frankfurt-Hoechst, Cardiology & Vasc. Surg. (97)
 Westpfalz-Klinikum Kusel, Angiology / Vasc. Surg. (90)
 Städtisches Klinikum Karlsruhe, Vasc. Surgery (90)
 Klinikum Mannheim, Cardiology / Vasc. Surg. (66)

Source: Weisse Liste
<http://www.weisse-liste.de>

SKILLED LABOUR OPPORTUNITY

Your fast track to skilled medical device labour

People make the difference. Investing and growing your business goes along with an increasing demand for skilled medical device labour. The **MANNHEIM medical technology cluster** comprises leading academic institutions dedicated to providing a ready pool of graduates for medical device R&D, Operations, Supply Chain, QA, Regulatory, Marketing, Sales and Distribution.

The following shortlist presents just a sample of academic institutions in Mannheim City:

University of Applied Sciences (Medical Technology), Mannheim
Medical Faculty Mannheim, Heidelberg University
DHBW University of Applied Sciences (Business, Public Health), Mannheim
Mannheim University (Business, Public Health, Healthcare)
Graduate School Rhein-Neckar (Life Science Management), Mannheim

Beyond those, the **MANNHEIM medical technology cluster** also hosts vocational colleges for qualified medical care staff, such as nurses, nurse-technicians, and paramedics.

RESEARCH OPPORTUNITY

Regardless of the sphere in which it is implemented, new medical technology presents a key success factor for medical device companies. The **MANNHEIM medical technology cluster** comprises research units and organisations that facilitate your research and development programs every step of the way along your value chain. From research into new medical technology platforms and medical devices, through research in medical device manufacturing engineering and automation up to clinical research.

Your fast track to dedicated medical device research

Clinical and procedural knowledge, engineering excellence and understanding of product development in medical devices are key factors to be first-to-market, and to meet your expectations for return on investment. The **MANNHEIM medical technology cluster** includes two medical technology research units, focused on the development of medical technologies for commercialisation.

IMT Mannheim Institute of Medical Technology
Fraunhofer Institute of Production and Process Automation, Project Group for Automation in Medical Engineering and Bioengineering, Mannheim

Your fast track to leading Clinical Research Organisations

Deep therapeutic knowledge and understanding of clinical development drives more efficient pathways to commercialization. Whether you are conducting a clinical study or are managing a product life-cycle, the **MANNHEIM medical technology cluster** includes CROs dedicated to support you.

The following shortlist presents just a sample of CROs in Mannheim:

AMS Advanced Medical Services
 CONET Clinical Operations Network
 CRS Clinical Research Services Andernach
 Dr. Knoell Consult
 FORIM
 IST Clinical Research
 PharmaLex
 PRA International
 QUINTILES Innovex
 Scope International

SAFETY IN NUMBERS

Beyond achieving net sales growth, today's medical device market environment requires solid management of both, your gross profit from operations, and your income from customers. Located in the **MANNHEIM medical technology cluster**, you are able to benefit from competitive labour cost and taxation schemes that help you drive bottom line growth.

Competitive Labour Cost

The EU Labour Cost Index includes salaries, social insurance charges for employers, and labour-related tax deducting labour-related subsidies.

EU Labour Cost Index Q2/2010

UK	102.3
Germany	102.9
Netherlands	104.0
France	104.1
Belgium	104.2
Italy	106.7

Source: Eurostat – The Statistical Office of the European Commission
http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/labour_costs/main_tables

Competitive Local Business Tax

Local Business Tax is charged by all territorial authorities. Its key indicator forms the so-called Gewerbesteuer-Hebesatz %.

Local Business Tax comparison for major german commercial areas 2010

Berlin	410%
Mannheim	415%
Stuttgart	420%
Duesseldorf	440%
Cologne	450%
Frankfurt	460%
Hamburg	470%
Munich	490%

Source: Federal Chamber of Commerce

DIHK:http://www.dihk.de/inhalt/themen/rechtundfairplay/steuerrecht/gewerbesteuer/hebesaetze_2010.xls

Competitive Corporate Income Tax

The Corporate Income Tax does not include other taxes, like local business tax, and other comparable taxes of federal and territorial authorities.

Corporate Income Tax comparison of european and industrial countries 2010

standard tax rates in %

Germany	15,0
Netherlands	25,5
Italy	27,5
United Kingdom	28,0
Belgium	33,0
France	33,3

Source: Federal Ministry of Finance

http://www.bundesfinanzministerium.de/nn_53848/DE/BMF_Startseite/Publikationen/Monatsbericht_des_BMF/2011/05/analysen-und-berichte/b04-steuern-internationaler-vergleich-2010/steuern-internationaler-vergleich-2010.html?__nnn=true

Competitive Company Tax

The Company Tax includes local business tax, corporate income tax and other comparable taxes of federal and territorial authorities.

Company Tax comparison of european and industrial countries 2010 tax burden of incorporated companies (nominal) in %

Netherlands	25,50
United Kingdom	28,00
Germany	29,83
Italy	31,40
Belgium	33,99
France	34,43

Source: Federal Ministry of Finance

http://www.bundesfinanzministerium.de/nr_53848/DE/BMF_Startseite/Publikationen/Monatsbericht_des_BMF/2011/05/analysen-und-berichte/b04-steuern-internationaler-vergleich-2010/steuern-internationaler-vergleich-2010.html?_nnn=true

Your fast track to emerging markets in eastern Europe

Germany has always been a natural gateway to emerging markets in Eastern Europe, particularly following the German reunification in 1990. Medical device companies located in the **MANNHEIM medical technology cluster** thus benefit from established political and commercial relationships facilitating your access to emerging markets in Poland, Russia, Czech Republic, Hungary, Turkey, Slovakia, Romania, and the Baltics.

Incremental german export growth to emerging market countries 2000-2007 in billion Euro

Poland	21,68
Russia	21,50
Czech Republic	13,30
Hungary	7,00
Turkey	6,73
Slovakia	5,18
Romania	5,27
Baltics	3,79

Source: Institut der deutschen Wirtschaft ref. Federal Statistical Office,

<http://www.iwkoeln.de/Publikationen/iwd/Archiv/tabid/122/articleid/24389/Default.aspx>

START-UP PROMOTION

Medical device founders and start-up companies located in the **MANNHEIM medical technology cluster** benefit from a start-up promotion programme that is considered a benchmark. This start-up promotion programme includes business consulting, funding, premium office space, and shared services at the MAFINEX Technology Centre, a dedicated resource for MedTech and other innovative entrepreneurs in early stages.

BUSINESS PARTNER

The **MANNHEIM medical technology cluster** provides both to you, hands-on support for your operational challenges as well as management advice for strategy and execution of your vascular device business.

Our MedTech industry senior professional, Mr. Elmar Bourdon, is your dedicated business partner, backed-up with 15 specialist staff in the Office of Economic Development.

A business graduate with postgraduate education in public health, Mr. Bourdon's medical device industry track record includes more than 14 years experience in product management, marketing, and sales roles in multinational and US-companies. He provides experience in building organisations, growing businesses in profit and revenue, and launching products, both, in Germany and in Europe. Prior to assuming his role for the **The MANNHEIM medical technology cluster**, Mr. Bourdon's positions included Product Manager at Siemens Healthcare/Sirona (NASDAQ: SIRO), Marketing Director Europe at Abbott (NYSE: ABT), and Business Unit Manager DACH at C.R. Bard (NYSE: BCR).