

# Welcome to Renishaw



Dr David Grant  
Senior Independent  
Director

Elaine Cherkov  
Accountant in  
Practice

John Wells  
Non-executive  
Director

Karl Saxon  
Non-executive  
Director

**Investor Day**

**12<sup>th</sup> May 2016**

# Agenda

- 10.45 Opening Address
- 10.50 Strategy update
- 11.30 Neurological Products update
- 12.15 Q&A
- 12.35 Lunch**
- 13.15 Additive Manufacturing & Solutions Centres
- 14.00 Metrology Solutions overview
- 14.15 Tours/product demonstrations
- 16.00 Refreshments
- 16.20 Wrap up / Q&A
- 16.45 Close

# Welcome & trading update

**Sir David McMurtry**  
Chairman and Chief Executive  
Renishaw plc

## Trading update – for the 9 months to 31<sup>st</sup> March 2016

- After the exceptional Far East sales of 2015, we have achieved cumulative revenue of £308.1m (2015: £369.7m).
- Our cumulative profit before tax is £46.3m (2015: £109.8m).
- Underlying revenue growth is 5.4%, after excluding the exceptional large Far East orders of last year.
- Capital expenditure to March amounted to £38.0m (2015: £34.4m)
- Strong balance sheet, with cash of £33.1m (2015: £58.9m) which excludes pension fund escrow account of £15.7m (2015: £15.1m)
- Full year forecast of:  
Revenue    £420m - £440m. Profit before tax £67m - £83m

## General

- Today we are showcasing our Neuro and Additive Manufacturing technologies of the future; these do carry higher risks but represent significant potential

They reflect Renishaw's innovation and creation of new opportunities based upon our core Metrology expertise

- This is followed by our Metrology Solutions overview which focusses on the development of complete engineering solutions for our customers
- I am pleased to announce that Kath Durrant is appointed Chair of the Remuneration Committee with immediate effect

# Corporate strategy

**Ben Taylor**

Assistant Chief Executive  
Renishaw plc

# About Renishaw

## World leading metrology company

A FTSE 250 company with headquarters in United Kingdom



## Advancing operational performance

Transforming manufacturing efficiencies and raising product quality

Maximising research capabilities

Improving medical procedures and patient outcomes

## Our ethos



“Renishaw fundamentally believes that success comes from patented and innovative products and processes, high quality manufacturing, and the ability to provide local customer support in all its markets around the globe.”

**Sir David McMurtry**  
Chairman & Chief Executive

## Our mission

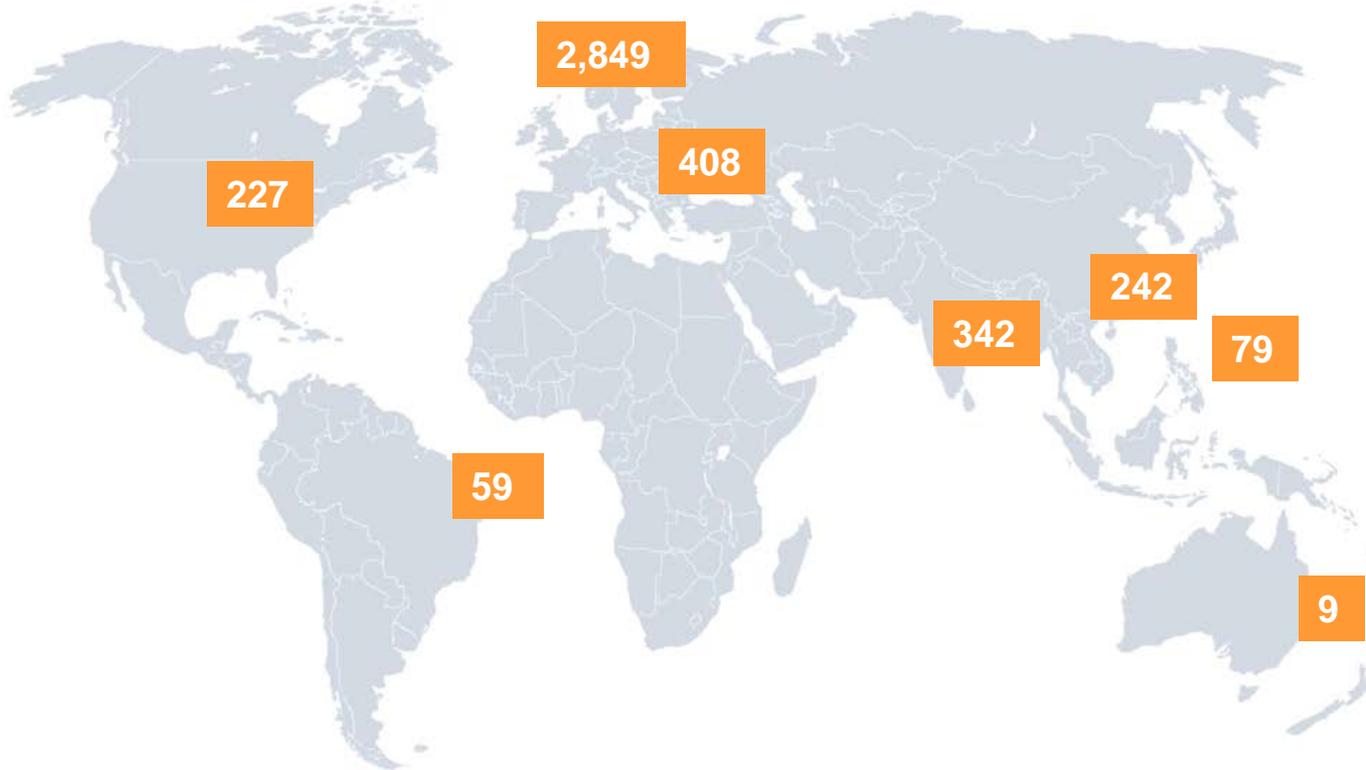
Provide leading-edge technology by encouraging innovation to address our customers' needs.

Design, manufacture, and supply metrology systems of the highest quality and reliability, enabling dimensional measurement to traceable standards.

Strive for total customer satisfaction through superior customer service.

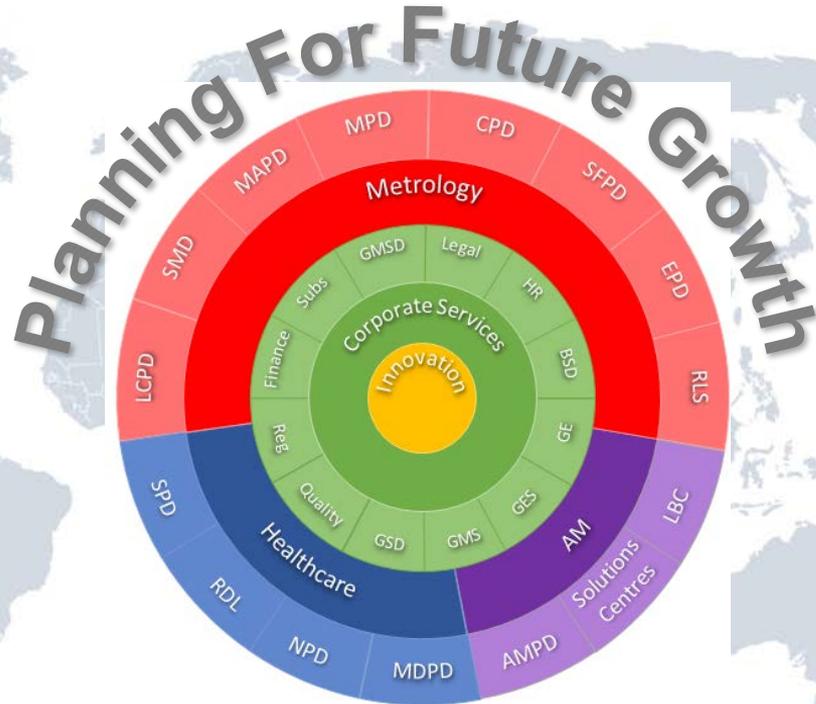


# Corporate Strategy



**4,215**  
employees  
focussed on  
growth

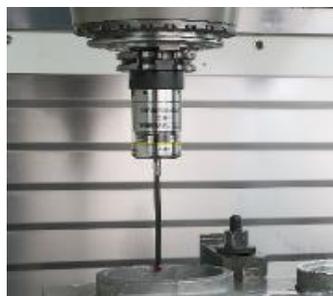
# Corporate Strategy



# Our expertise – Industrial metrology



CMM probe systems



Machine tool probe systems



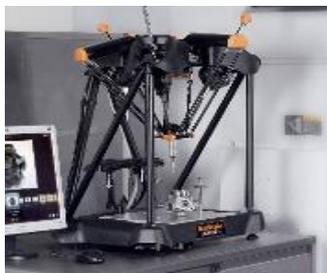
Styli for touch probes



Machine calibration



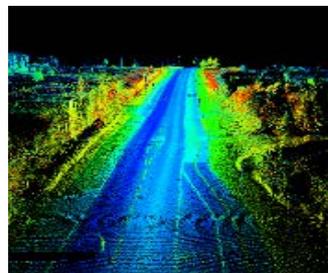
Fixtures



Versatile gauging



Position encoders



Spatial laser measurement



Additive manufacturing

# Our expertise – Healthcare



Stereotactic  
neurological  
systems



Medical,  
Dental  
CAD/CAM  
Manufacturing



Raman  
spectroscopy



Diagnostics

# Our customers



Aerospace



Agriculture



Automotive



Consumer products



Marine



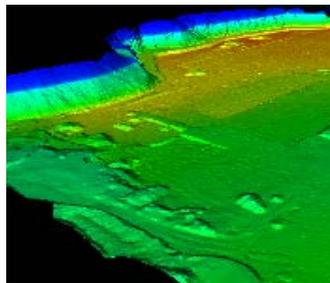
Construction



Medical



Power generation



Quarrying and mining



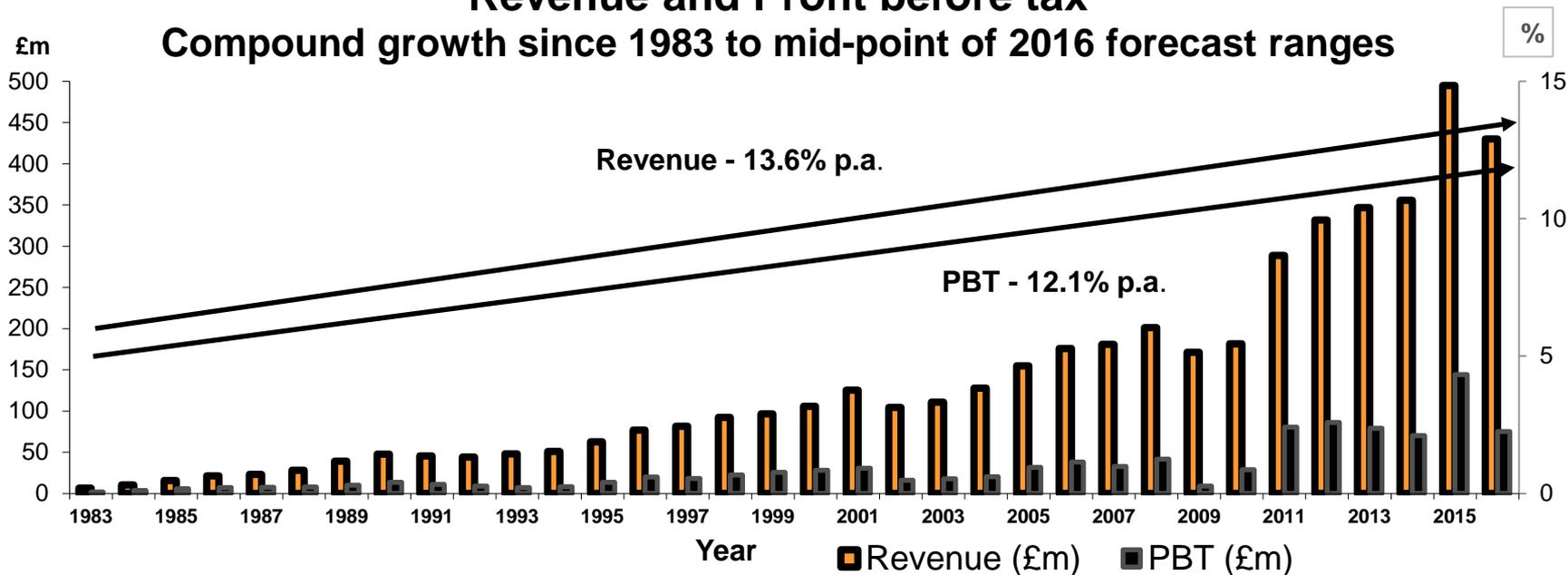
Oil and Gas

# Delivering Customer Solutions

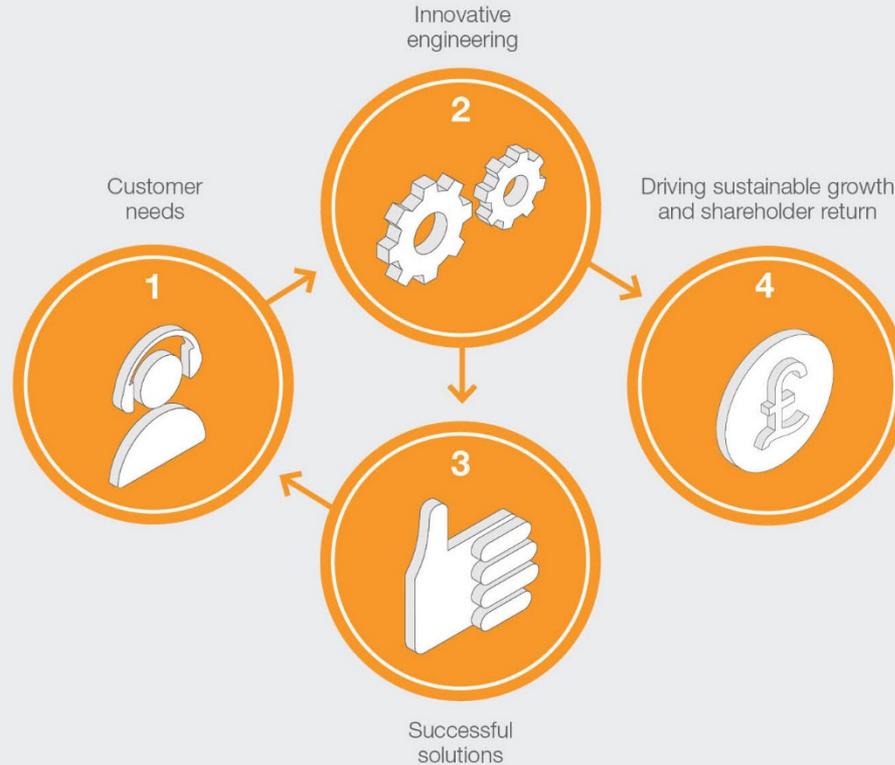


# Compound Revenue & Profit Growth

## Revenue and Profit before tax Compound growth since 1983 to mid-point of 2016 forecast ranges



# Our Business Model



# Our Strategy for long term growth



# Miskin site

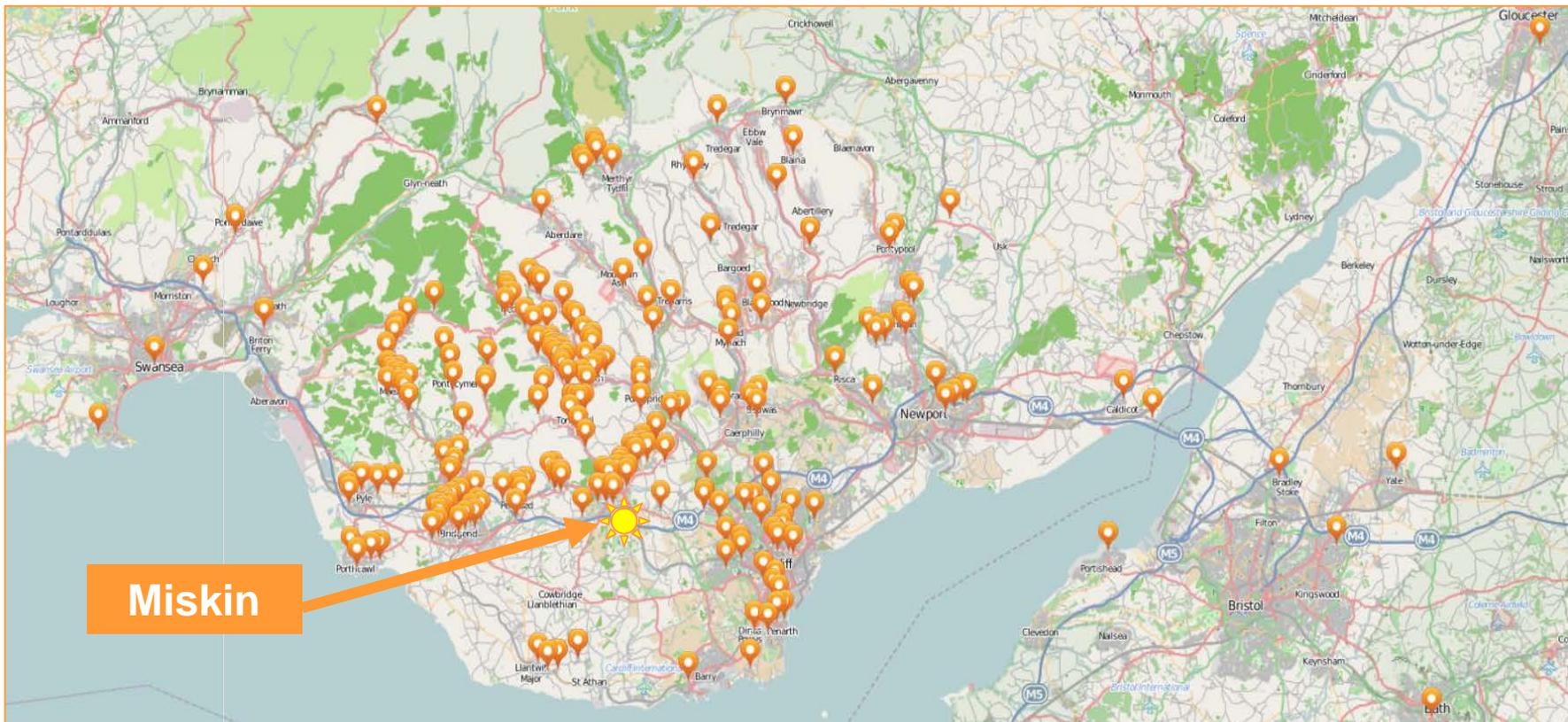


# 193 acre / 461,000 ft<sup>2</sup> site at Miskin, South Wales

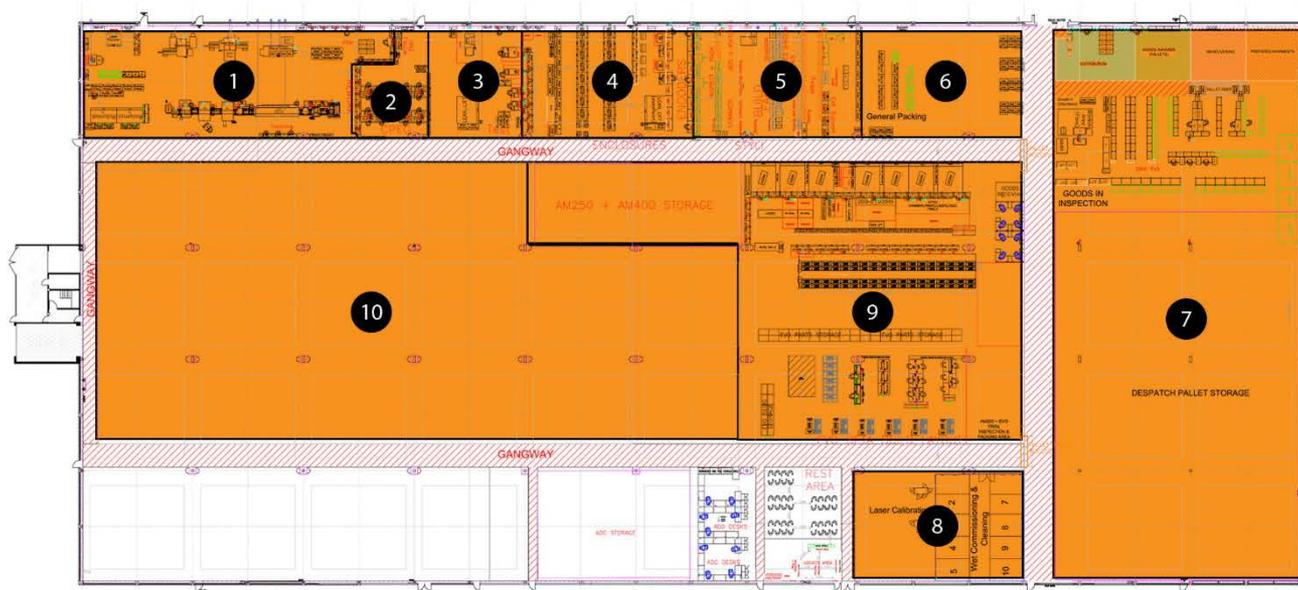


- 1: Highway upgrades
- 2: Hotel/Residential Training Centre
- 3: Business Park
- 4: Ecological Mitigation Zone
- 5: Employment/Distribution Centre
- 6: Surface Water Management
- 7: Renishaw Facility Expansion Area
- 8: Existing Renishaw Facility
- 9: Scheduled Monument

# Miskin – employee home locations



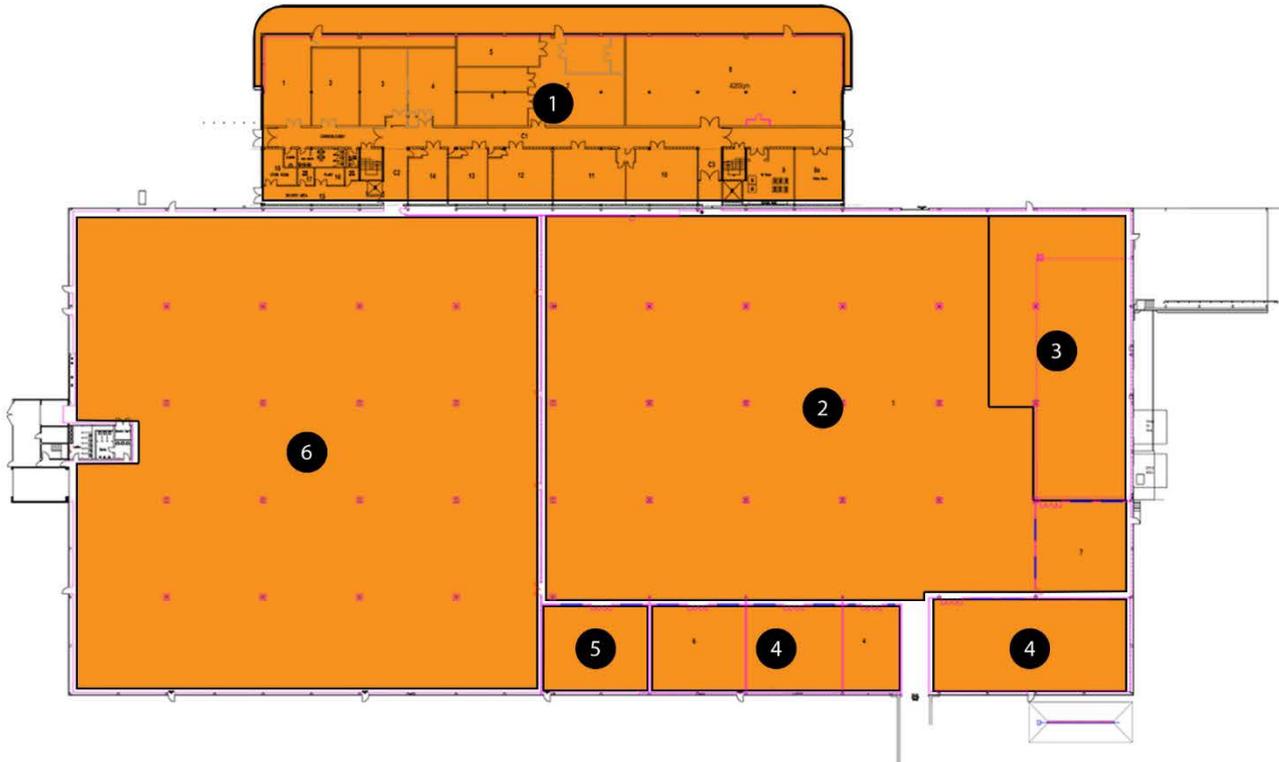
# Miskin layout



## Miskin Hall 1:

- 1 Electronics/PCB manufacturing
- 2 Manufacturing support
- 3 Electronics test
- 4 Electronics assembly
- 5 Styli assembly
- 6 Centralised packing
- 7 Goods in and despatch
- 8 Laser calibration
- 9 Additive machines assembly
- 10 Expansion space - assembly

# Miskin layout

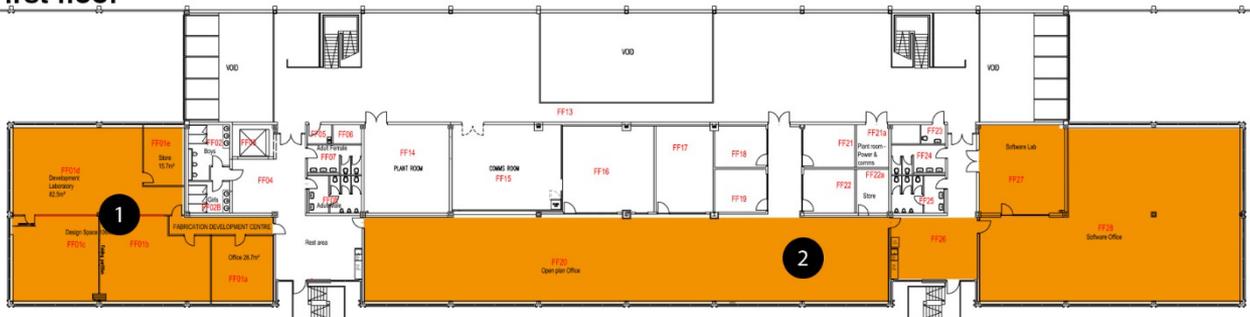


## Miskin Hall 2:

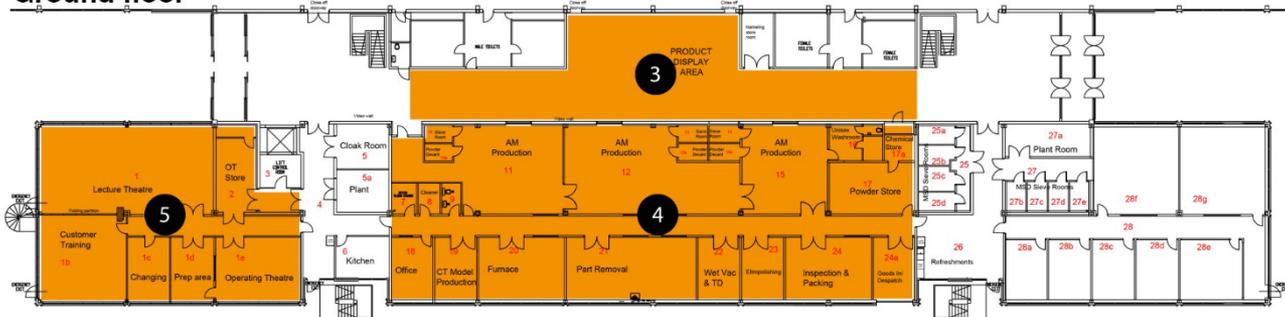
- 1 Encoder scale production
- 2 CNC machining
- 3 Raw materials
- 4 Process finishing
- 5 Manufacturing support
- 6 Expansion space - Manufacturing

# Miskin layout

## First floor



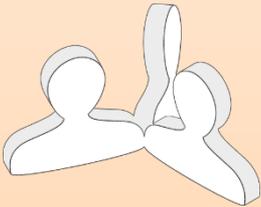
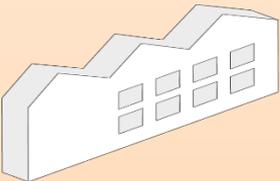
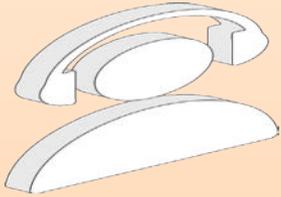
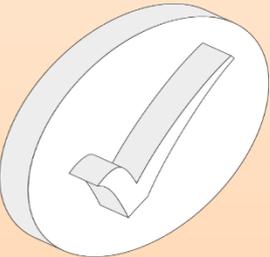
## Ground floor



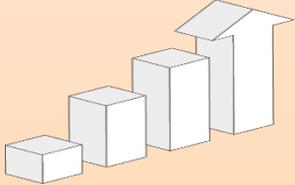
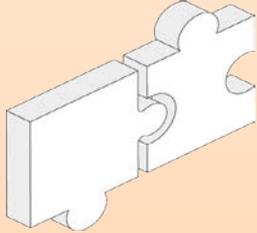
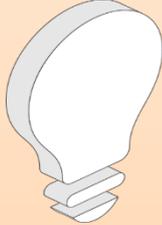
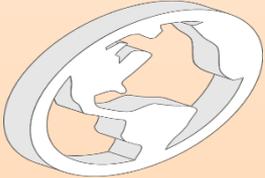
## Miskin Atrium:

- 1 Fabrication Development Centre
- 2 Research and development
- 3 Demonstration area
- 4 Maxillofacial and dental
- 5 Neurosurgical operating theatre and customer training rooms

# Miskin – corporate strategy in action

People	Efficient high-quality manufacturing	Customer support & training	Focus on delivering solutions
 <p>260 employees including graduates and apprentices. Fabrication development centre established this financial year</p>	 <p>Multiple manufacturing disciplines including:</p> <ul style="list-style-type: none"><li>• CNC machining</li><li>• Electronics line</li><li>• AM machine assembly</li><li>• Maxillo-facial, cranial plates and dental</li><li>• Anodising</li></ul>	 <p>We are building a state-of-the-art Healthcare Centre of Excellence</p>	 <p>There is strong focus on solutions within healthcare as well as supporting the metrology sector</p>

# Miskin – corporate strategy in action

Consistent organic growth	Supplementing the business with niche acquisitions	Continual research creating strong market positions with innovative products	Strong market presence and focus on emerging markets
 <p data-bbox="125 754 461 969">Miskin provides additional infrastructure to support our strategic organic growth</p>	 <p data-bbox="562 754 915 1002">The assembly of AM machines at Miskin is an example of how we integrate acquired technologies into the group</p>	 <p data-bbox="993 754 1375 926">R&amp;D teams working on embedded engineering and neuro software development</p>	 <p data-bbox="1437 754 1818 929">Miskin provides additional infrastructure to support our global growth</p>

# Our strategy in action

**William Lee**

Director of Group Sales and Marketing  
Renishaw plc

# Strategy: People



## Progress - highlights:

- Headcount of 4,215 at the end of March 2016, up 103 globally since June 2015. Currently 431 outstanding vacancies
- 88 graduates and apprentices recruited so far this financial year
- Renishaw in-house academy expanded with 6,400 training days completed (5,700 last year)
- Fabrication Development Centre established at Miskin - raise awareness for students, parents and teachers of engineering career opportunities

## Future plans - highlights:

- Extend and widen the scope of the Renishaw Academy
- Increase UK secondments to subsidiaries especially to support technical issues
- Increase health and safety training group-wide

# Strategy: Continual research for strong market positions



## Progress - highlights:

- 32 new patent applications filed & 54 previously filed applications granted this financial year
- Engineering investment to March 2016 up 13% to £54m - representing 18% of revenue; £48m in 9 months to 2015
- Metrology £47.2m (16% of revenue); Healthcare £6.8m (35% of revenue)
- Renishaw Doo established in Slovenia for ASIC design and supply.

## Future plans - highlights:

- Continual flow of new products in both metrology and healthcare

# Renishaw's research & development — UK & Ireland

Miskin



Metrology/  
Healthcare

Dublin, Ireland



Medical devices

Glasgow



Molecular Diagnostics

Edinburgh



Sensors

Alnwick



Metrology software

York



Scanning/surveying  
systems

New Mills



CMM, Machine tool,  
Encoder, Measurement  
& Automation,  
Spectroscopy,  
Calibration

Charfield



Dental, Neurological,  
Software

Castle Donington



CMM software

Stone



Additive  
manufacturing

Exeter



Metrology



# Renishaw's research & development — outside UK

France (nr. Paris)



Metrology

USA (Michigan)



Metrology fixtures

Germany (Völklingen)



Styli

Slovenia (Komenda)



Position encoders

Slovenia (Ljubljana)



IC/Sensors

India (Pune)



Software

Germany (Pliezhausen)

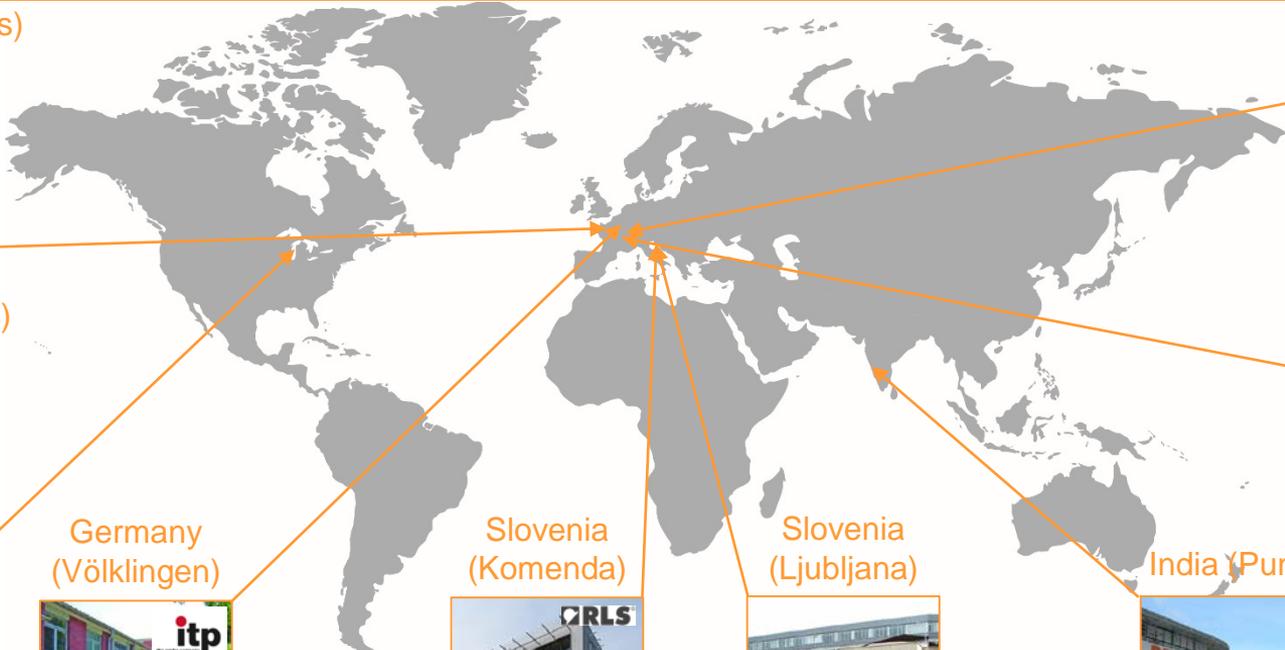


Additive manufacturing

France (Lyon)



Neurological



## New product release highlights - Metrology

### REVO-2

An improved version of the revolutionary multi-sensor 5-axis measuring head for CMMs. Has enhanced power and communications capability to carry the latest REVO sensors such as the RVP vision measurement probe, plus increased range of movement to improve part access.



### REVO® vision measurement probe (RVP)

A vision inspection system using REVO's infinite positioning and 5-axis motion capability. A solution for parts with large numbers of holes that can't be accurately measured with tactile probing or manual methods.

# New product release highlights - Metrology

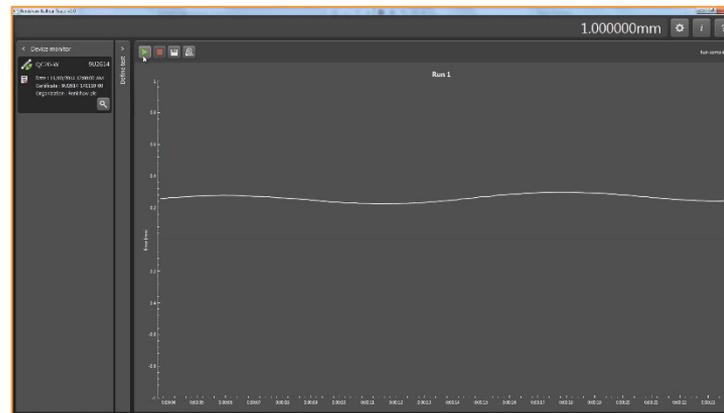
## MODUS 2™

Based on the established MODUS platform and supporting Renishaw's suite of 3 and 5-axis CMM sensor technologies, MODUS 2 has been designed with usability in mind. The innovative interface is simple for new users to learn, and faster to program too, resulting in unprecedented levels of productivity with or without a CAD model

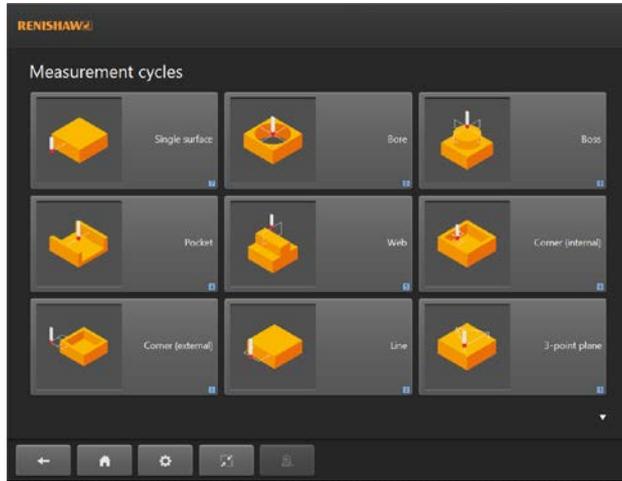


## Ballbar Trace

A new time based data capture software package for the QC20-W ballbar. It is free of charge to existing QC20-W users and opens up many new applications, including static monitoring and data capture for ISO 10791-6, and also reduces test setup time for the system.

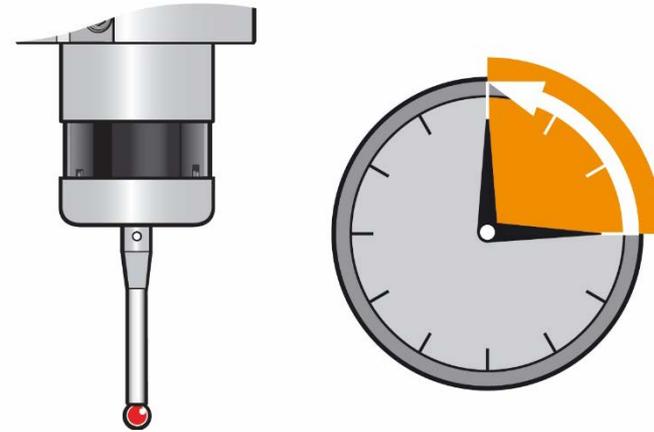


# New product release highlights - Metrology



## Renishaw Set and Inspect

An on-machine app for interactive part set-up, inspection and toolsetting using Renishaw probes. Complements the new range of touchscreen CNC controllers from major machine tool builders. Part of a developing family of on-machine apps



## Inspection Plus with SupaTouch optimisation

An enhanced software package that automatically optimises probe measurement cycles on CNC machine tools to minimise cycle time and maximise productivity.

# New product release highlights - Metrology



**AM400**

Flexible metal additive manufacturing system - a development of the AM250 platform with improved control software, revised gas flow and window protection system, and a new 400 W optical system that gives a reduced laser beam diameter of 70 micrometres.

## RenAM 500M

Metal additive manufacturing system designed specifically for the production of metal components on the factory floor. It features automated powder and waste handling systems that enable consistent process quality, reduce operator touch times and ensure high standards of system safety. In-house designed optical system and control platform.



## QuantAM

Build preparation software for preparing CAD models for production, using Renishaw additive manufacturing systems.



# New product release highlights - Metrology

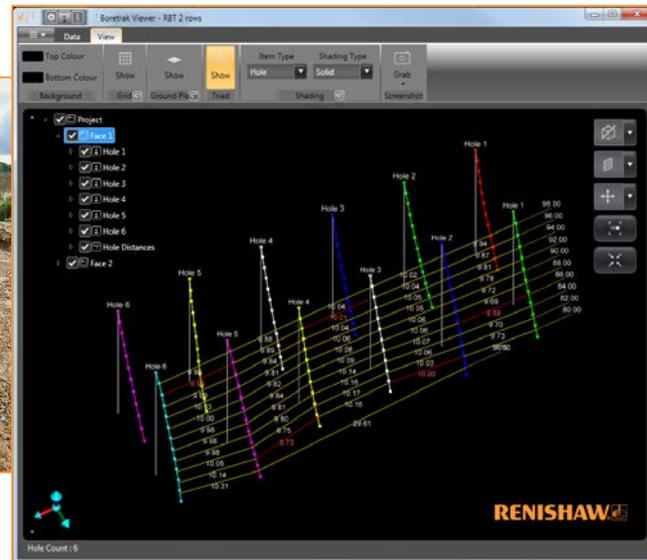


## Merlin

A dedicated time-tagged marine laser scanning system to help cut the cost of vessel-based surveying. It supports safer, faster and more complete marine survey data acquisition for efficient coastal, offshore and inland waterway project management.

## Boretrak® Viewer

Software for use with Renishaw's Cabled Boretrak and Rodded Boretrak deviation measurement system for safer and more efficiently planned drilling and blasting.



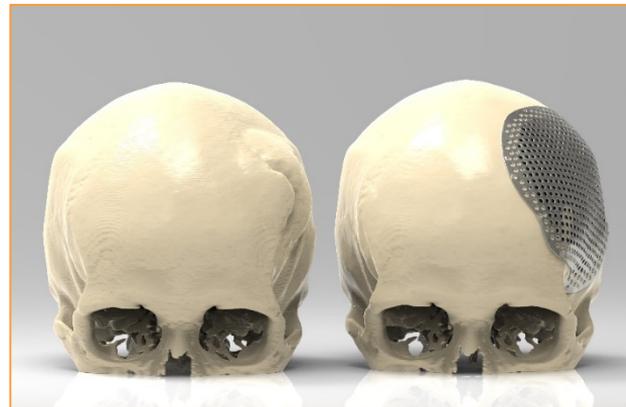
## New product release highlights - Healthcare

Renishaw is developing solutions for medical and dental additive manufacturing customers, helping to significantly reduce their product's time to market. We work with clinicians and academics to offer metal 3D printed implants direct to hospitals.



### **LaserRPD™**

Metal 3D printed partial dentures.



### **LaserImplants™**

3D printed metal craniomaxillofacial implants: used as part of treatment for trauma or disease as well as being used in neurological surgery as part of a total Renishaw solution.

## New product release highlights - Healthcare



### inVia Qontor

Our most advanced Raman microscope, sees the addition of Renishaw's latest innovation, LiveTrack™ focus tracking technology, which enables users to analyse samples with uneven, curved or rough surfaces.

### Neurolocate™

A frameless patient registration module designed for use with the *neuromate*® stereotactic robot. The technology is based on a fiducial marker that is mounted on the robot arm during intraoperative X-Ray/CT



# Strategy: Efficient, high-quality manufacturing



## Progress - highlights:

- Ireland: premises acquired - will be used for future growth
- Miskin – increased capacity; hall one now operational
- Continued substantial investment in plant & machinery
- Inventory policy flexible to cope with sudden demand changes and short order book

## Future plans - highlights:

- Miskin: Further development of site; AM machine commissioning, obtain planning consent
- We have available capacity overseas e.g. Ireland and India (further expansion planned in India)

# Renishaw's manufacturing - UK & Ireland

Miskin



Machining, sub-system & final assembly  
Increased capacity; further development

Dublin



Sub-system & final assembly  
New premises acquired

York



Sub-system & final assembly

Stonehouse



Machining

Woodchester



Sub-system & final assembly

New Mills

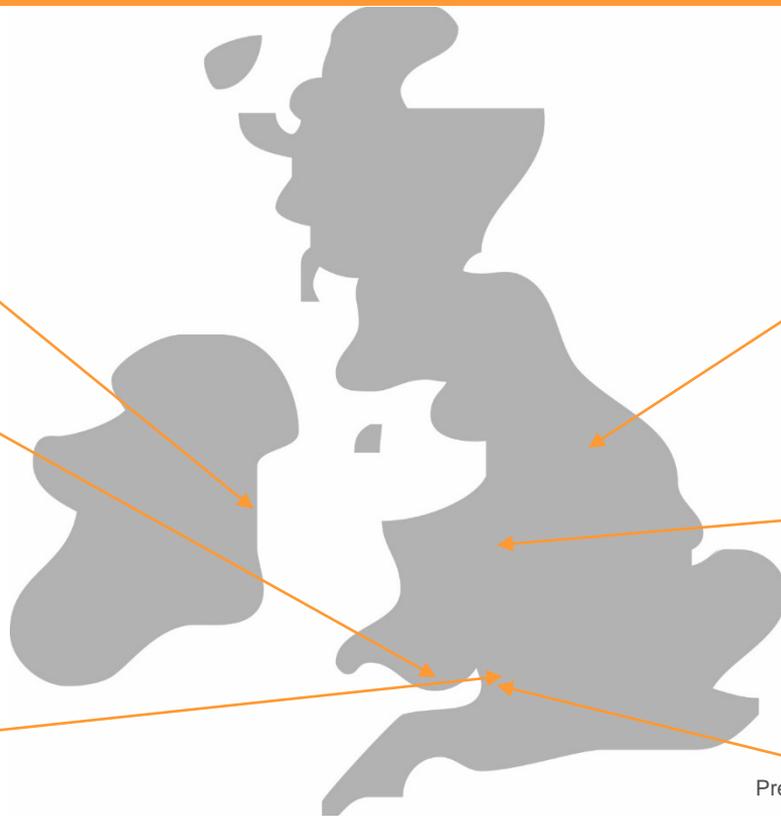


Pre-production, sub-system & final assembly

Stone



Sub-system & final assembly



# Renishaw's manufacturing – outside UK

USA (Michigan)



Machining & assembly

France (Lyon)



Assembly

Germany  
(Völklingen)



Machining & assembly

Slovenia  
(Komenda)



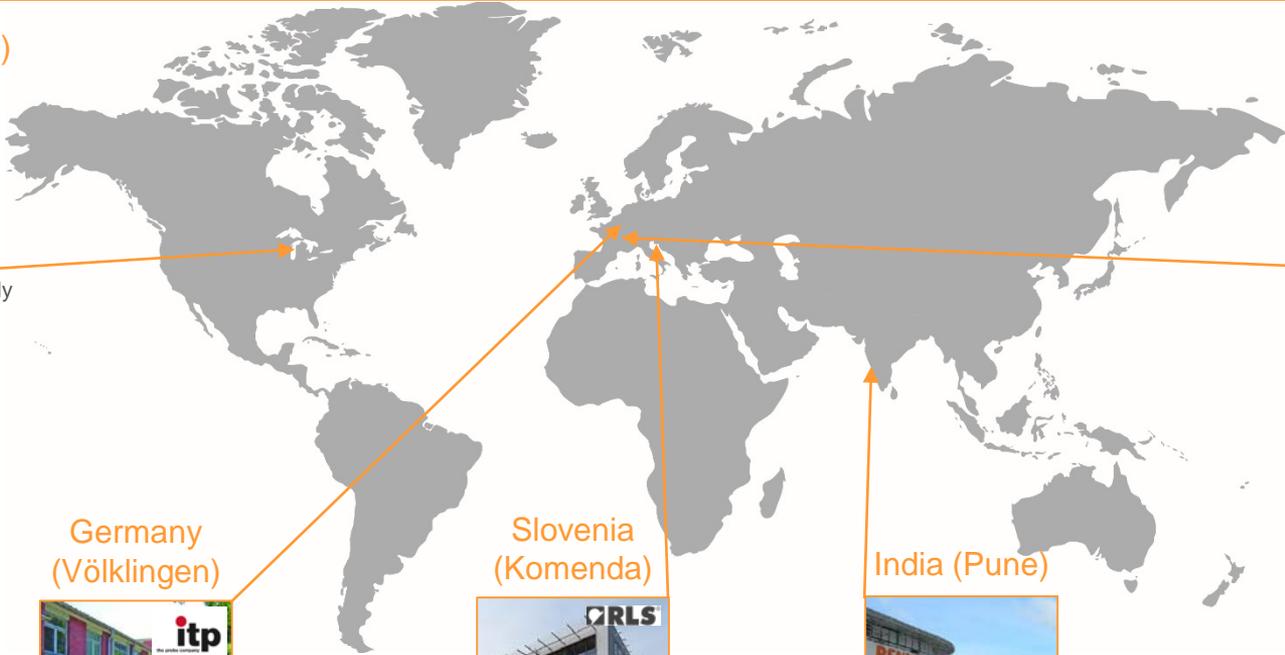
Assembly

India (Pune)

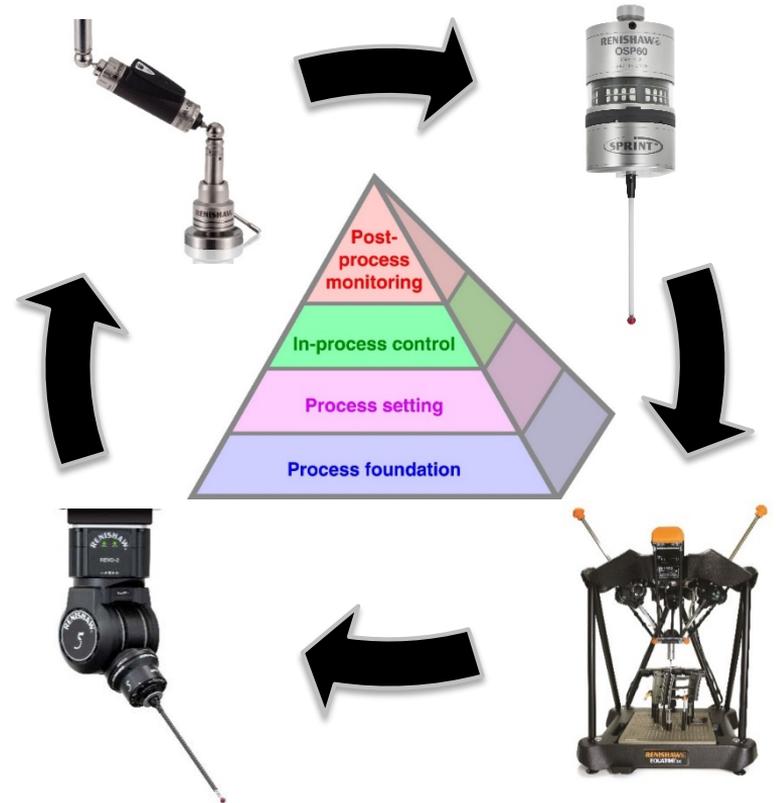


Assembly

Further expansion  
planned



# Strategy: Focus on delivering solutions



## Strategy: Global customer support / Strong market presence



### Progress - highlights:

- Headcount increase overseas 94 since June 2015 including solutions applications resources
- Healthcare Centre of Excellence at Miskin nearing completion
- New subsidiaries created, new property builds/acquisitions, plus refurbishments in progress
- Move to new facility in Taiwan
- Solutions Centres opening during 2016

### Future plans - highlights:

- Conversion of representative offices in Turkey & Hungary to subsidiaries
- New builds in Czech Republic and Detroit
- Continuing roll out of Solutions Centres

# Strategy: Global customer support / Strong market presence



# Renishaw Inc. development



**New USA headquarters at West Dundee, near Chicago – 133,000 sq ft on 11 acres of land**

# Strategy: Consistent organic growth



## Progress - highlights:

- New Mills: 153,000 sq ft Innovation Centre is fully operational; spectroscopy and laser calibration divisions now relocated to site
- Invested £49.6m in capital expenditure in the year to June 2015. Amount to March 2016 stands at £38m.
- Further investment in IT infrastructure including setting up of regional data centres
- Accommodation for employees in Wotton-under-Edge is in progress

## Future plans - highlights:

- Old Town site in Wotton-under-Edge is being refurbished for R&D capacity increase
- Evaluating further expansion at New Mills and Miskin

## Strategy: Consistent organic growth

### Official opening of the Renishaw Innovation Centre – July 2015

The then Princess Anne last visited Renishaw in 1980 to open an extension to our first commercial premises.

Comparing 1980 to 2015:

<u>1980</u>	<u>2015</u>
110 employees	>4,000 employees
£2m sales	£495m sales
1 office	72 offices in 33 countries
1 apprentice	124 apprentices
2 Queen's Awards	18 Queen's Awards

