



Equipment Digitisation
Digital Twin

Reducing Unplanned Downtime



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Introducing invisu

invisu is a **Digital Twin** and **3D interactive software system** which provides a suite of digital solutions to manage and control the full end-to-end life cycle of complex manufacturing equipment.

Aimed at OEM's and their end users, the system allows you to control and monitor everything from assembly and installation to maintenance, repairs, parts, and decommissioning of equipment. It is an ecosystem of everything your engineering teams need to keep your facility running at maximum capacity.

Unplanned downtime is costing the manufacturing sector **\$1.5 trillion per year**. Our mission is to help manufacturing companies save money and reduce emissions by helping them to reduce this unplanned downtime whilst ensuring machinery and equipment is correctly and consistently maintained. invisu does this in two ways, by helping to prevent unplanned downtime before it occurs and provide rapid intervention at the point of need upon the occurrence of equipment/production stoppages.

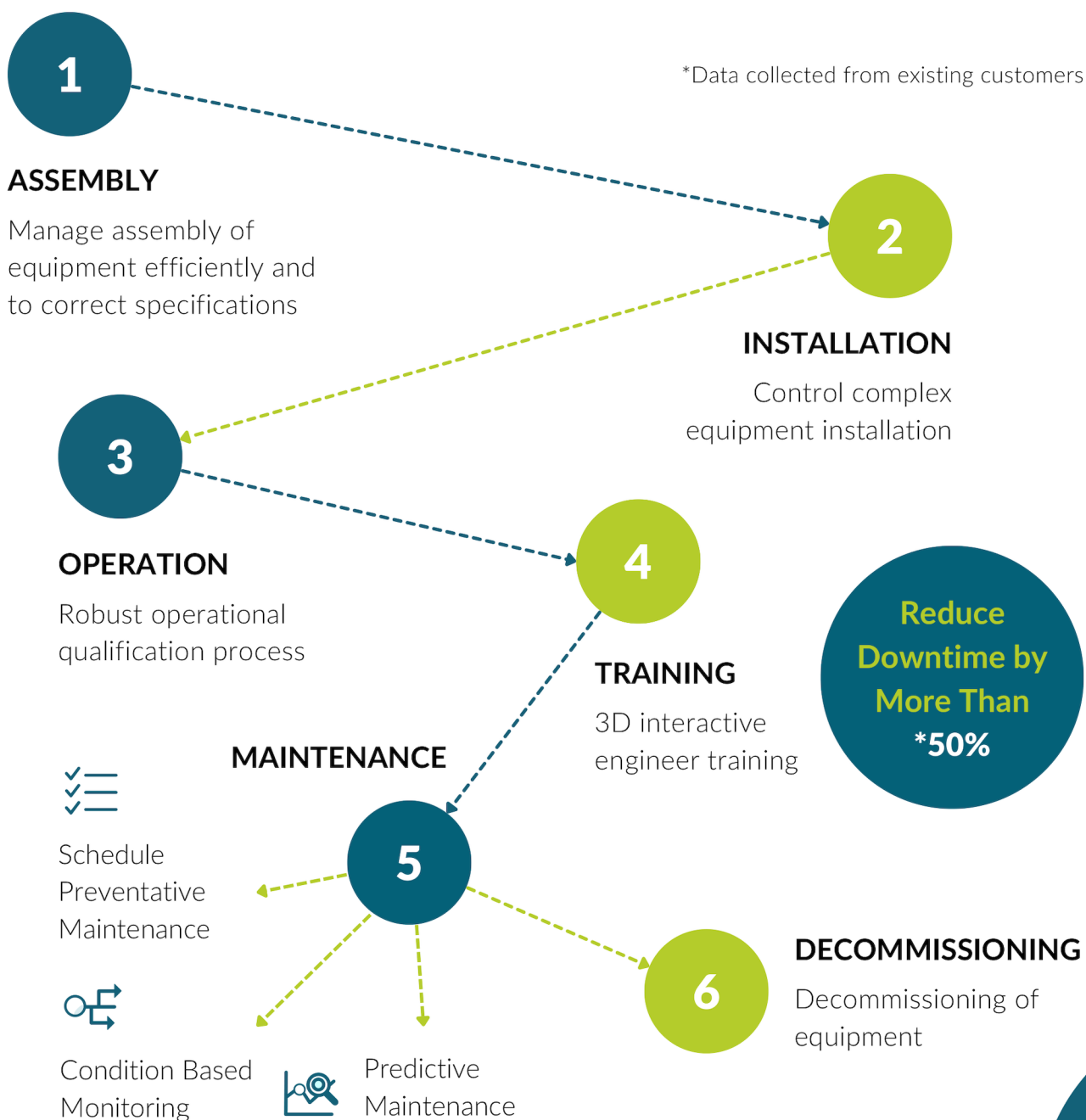
To assist companies who wish to digitise and move away from paper-based systems, we provide a technical authoring of product and machinery documentation service to include the creation of fully interactive 3D maintenance procedures and catalogues.

invisu is actively being used in the market by companies such as Amazon and Expert Technologies Group and is in continuous development with condition based monitoring and predictive maintenance using AI planned as part of future development.



How invisu Works

The system provides complete end-to-end life cycle care for complex equipment and machinery and assists with assembly, installation, qualification, engineering and preventative and predictive maintenance.



invisu Features



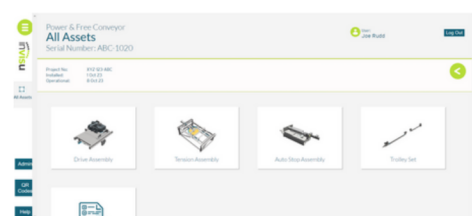
Control Complex Installations



- Installation documentation and quality control
- Digital installation process including dynamic PDF generation
- Full featured installation qualification authoring with granular tests and signoffs
- Full audit log of completed tests and digital signoffs by user



Operational Qualification



- Operational documentation and quality control
- Digital operational qualification process including dynamic PDF generation
- Full featured operational qualification authoring with granular tests and signoffs
- Full audit log of completed tests and digital signoffs by user
- Digital O&M manuals.



3D Interactive Maintenance Procedures & Parts Ordering

- 3D interactive machine walkthroughs
- Maintenance work orders
- Full audit log of completed tasks by user
- Full spares catalogue
- 3D interactive modelling to order parts
- Part detailed numbers with ability to create purchase orders
- Bill of materials

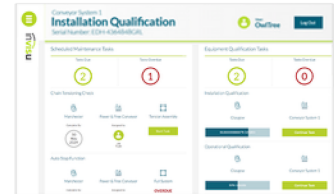


invisu Features



Preventative Maintenance Scheduling

- Manage preventative maintenance
- Automated maintenance schedule and procedures
- Detailed pre-authored maintenance instructions
- Parts kits for scheduled maintenance tasks with 'just in time' delivery
- Incomplete maintenance notifications for warranty purposes



Digitised Documentation & 360 Scans

- Organise manuals, drawings and CAD files
- Easily updatable digital manuals with dynamic PDF generation
- Organise mechanical, electrical and pneumatic drawings
- 3D interactive walkaround, allowing users to visualise the working environment and view documentation remotely without being physically present on site



Task Management & Communication

- Manage installation, operational and qualification procedures
- Manage preventative maintenance and pre-schedule maintenance checklists
- Report equipment faults
- Full audit log of completed tasks by users
- Inter-user messaging
- Communicate with equipment manufacturers and technical authors



invisu Features



Engineer Training

Share best practice using the invisu Training System, enabling specialist knowledge to be shared with the next generation of engineers.

- 3D interactive learning and testing, including walkarounds of the working environment
- Learning materials in various formats including interactive 3D breakdowns and explanations. 3D models show, step by step, how to resolve problems
- Individual learning records, automated repeat reminders and new topics
- Improve knowledge retention and measure success over time with management information and data reporting
- Logging system measures user interactions with documentation



Future Development

invisu is under continuous development and improvement.

- Condition Based Monitoring
- Diagnostic Troubleshooting
- Predictive Maintenance

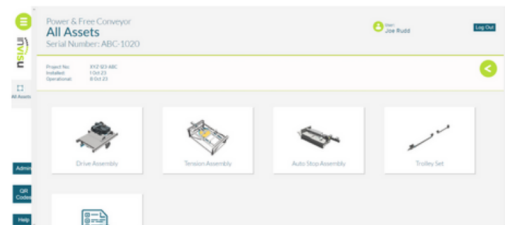


Technical & CAD Authoring

Quality documentation is vital to an organisation's success and critical for your customers.

To accompany the invisu product, we can provide full authoring of product and machinery documentation to all sectors of industry. This 3D communication offers an intuitive, knowledge transfer which eliminates the risk of information being misinterpreted as is common with traditional methods.

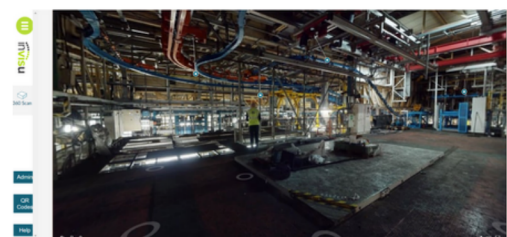
Process & Machinery Document Authoring



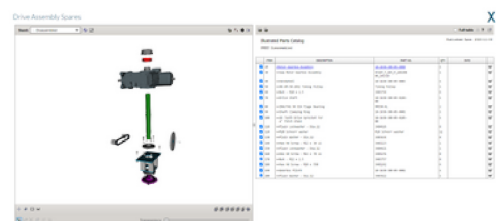
3D Interactive Creation and Support Documentation



360 HD scans and virtual walkthroughs of your equipment and production lines



Training documentation creation with 3D interactive animated e-learning procedures



How invisu is Delivered



Benefits of Using invisu

By implementing invisu in your business, you can reduce costs and emissions whilst improving efficiency and increasing productivity.

| | |
|-----------|--|
| 1 | Reduction in unplanned downtime of machinery and equipment |
| 2 | Improved equipment installation and qualification process |
| 3 | Improved maintenance and lifecycle of machinery and equipment |
| 4 | Identify and rectify issues and equipment breakdowns more efficiently |
| 5 | Reduction in travel costs and carbon emissions as problems can be solved remotely |
| 6 | Paper documents, such as manuals, can be digitally authored and stored securely, resulting in waste reduction |
| 7 | Reduction in warranty claims for OEM's |
| 8 | Improved parts ordering process and stock management |
| 9 | Training system for employees. Best practice can be shared, and installations/part replacements carried out to specification |
| 10 | Detailed data analytics and reports to assist financial teams |
| 11 | Improved overall service delivery for your customers |



Industry Sectors

invisu has been developed to assist companies in various sectors of industry and is adaptable around implementation and usage.

invisu can help eliminate downtime, repair costs and warranty claims. It can support market changes, increase efficiencies, and provide cost savings for Original Equipment Manufacturers and their end users.

Automotive

Logistics & Warehousing (inc. Shipping)

Food & Beverage

Pharmaceutical

Chemical

Airport Baggage Handling Systems (BHS) and Security



Case Study - Automotive



The Challenge

Luxury SUV Manufacturer Production Line Down for 4 Hours

We visited a luxury SUV manufacturer and whilst there the production line went down. One SUV should have been coming off the production line every 80 seconds. Over the 4 hours, **\$18 million** was lost in revenue.

3.5 hours of the 4 hours was spent by the maintenance team looking for part numbers and establishing the correct swap out procedure. It was then fixed in 30 minutes.

Production line was still consuming energy for **4 hours. 48 tonnes of CO2** was emitted needlessly.

US \$15.8 million
Potential Saving

The Solution

With invisu the information required would have been available at the point of need providing rapid intervention.

invisu could have saved the company **3.5 hours** or a potential saving of **US \$15.8 million**.



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