TURNING IDEAS INTO REALITY

X-ray CT improves the product development process

X-ray computed tomography, the only non-destructive technology to see inside your samples.

RX Solutions, Annecy, France

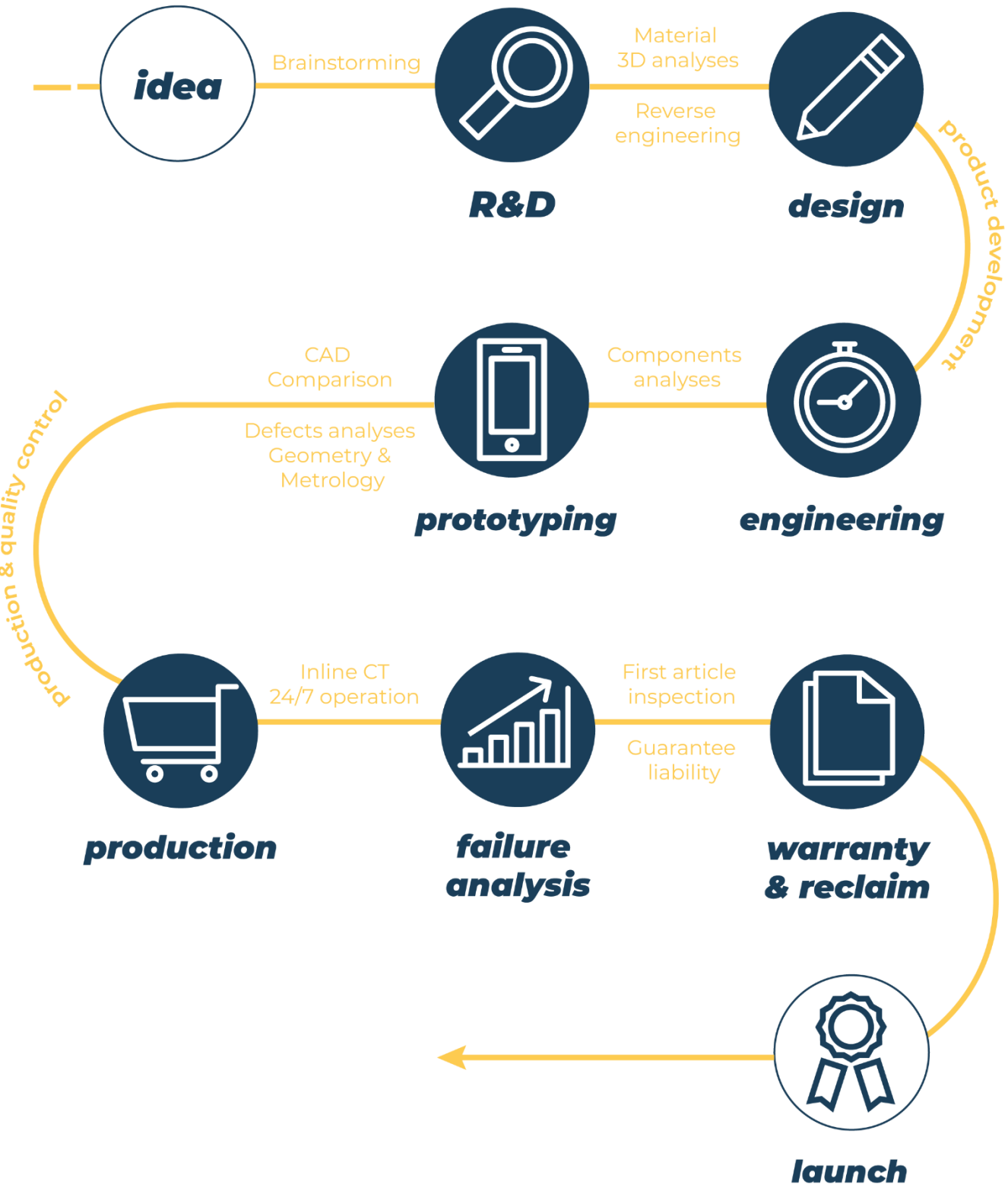
From inspiration, to design, to prototyping, developing a product can be quite long whether you are starting from square zero or upgrading an existing one. Imagining each of these steps goes perfectly, your product might seem ready from the outside – ready for manufacturing. But what about any potential defects you couldn't see? What about the assembly issues? What about any internal porosity, cracks, dimensional issues that you may have overlooked but can affect its features? Simple, investigate it with X-ray CT and every step of product development is suddenly faster, easier, more practical.

Computed Tomography: a must-have technology to improve the product development process

X-ray CT is a non-destructive technique that allows you to have a perfect understanding of a part's hidden features which leads to a set of analyses and measurements such as porosities, wall thickness analysis, cracks... of internal and external structures.

As it is very rare to get to the final version of a product in one go — X-ray CT helps you try out numerous different versions of your product, gradually removing choices and improving its quality or materials until you're happy with a final sample.

X-ray CT inspection
at every stage of product life cycle



As a very innovative technology that evolves constantly, X-ray CT plays a significant role in product development for various reasons:

- X-ray CT links all phases of product development such as R&D, product design, engineering, prototyping
- The product life cycle process is more fluent in-between every department
- Projects of creating a new product or improving an existing one have increased performance as the whole process is a connected one
- It proves sustainable resource management as results are fast and based on a non-destructive approach
- Product validation with defect detection before entering the manufacturing phase
- Eliminate the guesswork by approving prototypes' functionalities quickly
- The more complex the idea seems; the more X-ray CT can be necessary as it allows a complete visualization in 3D of every little tiny detail
- From brainstorming ideas to directly testing and evaluating their relevance with X-ray CT is just faster
- Speeding time-to-market process and being able to innovate
- Be one step ahead in your targeted market with improved competitiveness

Creating the product of the best quality with X-ray CT

Various analyses can be done on a product, in its development phase, with X-ray CT. From nominal to actual comparison, coordinate measurements, material analyses, 4D inspection… every inspection is detailly revealed in a single scan allowing you to get the best quality product before sending it to the manufacturing phase. From nano to microtomography, with a resolution below the micrometer, details at a nano scale can be observed.

Compare your product

Nominal-to-actual comparison that shows geometric differences between scanned workpiece data and a CAD nominal model plays a key part in the development of your product. Compare CAD drawings to X-ray CT scans by looking at the shape, size, and inner details of your part without causing any damage.

A color code is also used to display deviations, giving a visual representation of the variations between components.

Find the best material

When developing a product with multiple materials or trying to use less for environmental reasons, you can count on micro-structure analyses and high-resolution assembly inspection.

Visualizing tiny details, allows you to access every material's behavior and interaction if using multiple, thus finding the best and innovative material.

Avoid defects that impact a product's functionality

Non-destructive testing enables for the detection of structural flaws like as cracks, porosities, and inclusions. The investigation of cracks, voids, porosity, and inclusions reveals critical physical features that reflect poorly on the component's quality and performance aspects.

X-ray CT allows you to detect, quantify, and measure flaws all while visualizing them in 3D in a color code.

Get high accuracy geometries

CT is a strong non-destructive technology that allows for the measurement and characterization of an object's inner and outer structures in a 3D volume, as well as the determination of various surface and feature data. Any traditional measurements, including GD&T dimensional measurement and position tolerances such as parallelism, perpendicularity, and concentricity, can be done in a single X-ray CT scan regardless of shape complexity.

Saving time, money, and warranty & reclaim issues with X-ray CT

Creating a new product can be costly and time-consuming. While traditional testing techniques can take months and strain your resources when it comes to product development, X-ray CT offers quick and accurate 3D data that speeds your time to market and ensure the greatest quality.

Indeed, during the product development stage, X-ray CT is a valuable 3D imaging technique for detecting flaws in a prototype and offering engineers valuable information before full-scale manufacturing begins – allowing to save time and money.

With early defect detection, not only do you avoid warranty & reclaim issues and a bad reputation, but you also increase safety, availability, reduce maintenance and error proneness – making your product with the highest quality in a short timeframe.

RX Solutions CT systems: Ease of use and automation

Easy to use, X-ray CT allows with a single scan to accurately visualize and inspect the inner structure of material samples, workpieces and assemblies in a non-destructive manner. This allows to detect defects such as cracks, delamination, porosities…or to perform a metrological inspection of the inner and external structure of the scanned workpiece.

The RX Solutions' micro and nano CT systems are recognized for their high performance, their flexibility and reliability. They are widely used by academic research labs as well as by industrial companies for non-destructive testing in R&D, quality assurance or production process control.

EasyTom S

Compact. Medium size samples.
Maximized uptime

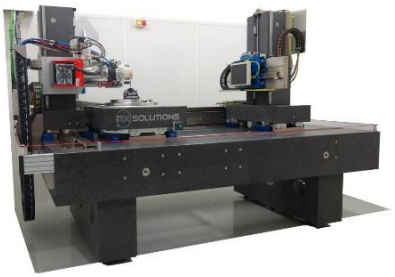
EasyTom

Flexible. Micro & Nano focus.
Medium size samples.

EasyTom XL

Powerful. Step-in-cabinet.
Large size samples.

UltraTom



Lab CT system. Multi tube & detectors configurations.

INDUSTRIAL COMPUTED TOMOGRAPHY HIGH PERFORMANCE X-RAY SYSTEMS

RX Solutions designs and manufactures innovative non-destructive X-ray imaging systems. We also have a service department specialized in X-ray inspection.

RX Solutions' range of equipment covers all industrial and research applications in micro and nano-tomography.

Discover more on RX Solutions at the following address: **www.rx-solutions.com** and follow us on Instagram **@rx.solutions.**

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