

GDC TECHNICS

Case Study



Image © GDC Technics

Challenge

As it seeks to cement its reputation as one of the best aircraft modifications company in the world, GDC Technics needed an end-to-end design and engineering platform that would allow it to deliver on its customers' unique requirements and remain compliant with industry certifications.

Solution

GDC Technics adopted Dassault Systèmes' **3DEXPERIENCE** platform and its Cleared to Operate industry solution experience to bring together all of its engineering and certification data while giving engineers a common set of tools to work with.

Benefits

A model-based, data-driven approach allows all involved parties to operate within the same digital workspace, improving company-wide collaboration, shortening time-to-market and stimulating ongoing creativity and innovation while simplifying project management.

ENGINEERING THE IMPOSSIBLE

The Boeing 787 Dreamliner is one of the world's largest private jets. It's known as a VIP aircraft – a term used to describe the largest and most expensive corporate jets, transporting heads of state and high net worth individuals in absolute luxury. When GDC Technics, a global leader in aircraft engineering, modification and completion services, took on the job of constructing customized interior cabins for two B787s for a head-of-state customer, it set out to equip the jets with the latest connectivity and passenger comfort capabilities. This included live television – a first for any VIP B787 – a full security system, quieter cabins and additional humidification systems to help combat jet lag during long-haul flights.

Brad Foreman, CEO of the US-based GDC Technics, said on the recent completion and delivery of these two aircraft that they "are absolutely unmatched in the industry," adding that GDC "will continue to pioneer the way for next-generation aircraft and has mastered the engineering to do so."

GDC Technics has grown from a single-service modifications business into a global company providing an extensive range of engineering and technical in-house services to airlines, original equipment manufacturers (OEMs), government organizations and heads of state. It is driven by the belief that if something can be dreamed up, it can be done, and today, by focusing on developing new, innovative engineering and production techniques, GDC Technics aims to be the best aircraft modifications company in the world.

GDC Technics' tagline, 'Engineering the Impossible', reflects its relentless pursuit of limitless possibilities, inventive qualities and perpetual advancement. To support its vision, the company is taking advantage of the 3DEXPERIENCE® platform from long-term partner Dassault Systèmes, using it to drive innovation and ensure engineering continuity across its sites in North America and the UK.

CONSISTENT, CONTINUOUS DATA

When designing and engineering for any new projects, GDC Technics must maintain full control of production, installation and certification of significant changes in aircraft constructions, systems and cabins.

To achieve this, it needs digital continuity across all facets of its business – one central platform where all data converges and provides all the tools needed during a project – allowing all stakeholders to have access to the one design or model, of which just one version exists. GDC Technics selected the 3DEXPERIENCE platform to make this a reality.

"It's GDC Technics' vision to have complete transparency throughout the end-to-end digital solution," said Mark Reynolds, operations manager at GDC Technics. "We use Dassault Systèmes' 3DEXPERIENCE platform with CATIA and ENOVIA to enable GDC Technics to be industry leaders, and work with OEMs, our suppliers and partners to ensure digital continuity across all elements of the product lifecycle."

ALWAYS CERTIFIED

As they manage each end customers' specific requirements and modifications, engineers must also ensure the aircraft complies with the latest regulations specified by global certification authorities. It's a complex task. Every person

working on a project must continuously fine tune changes with each other, as well as with the OEM, the suppliers of parts, and other partners involved in a project. Throughout, engineers have to ensure the data is consistent with the aircraft type certificate. Any error in this process – for instance due to involved parties working with different versions of a design – has far-reaching consequences, jeopardizing certifications and causing a plane to remain grounded.

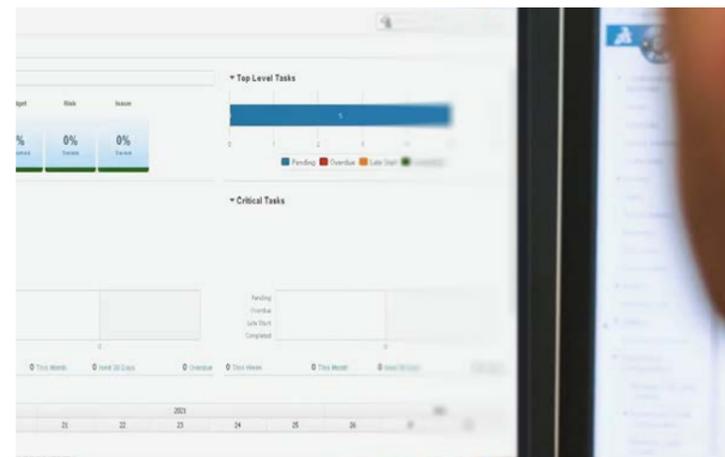
To avoid this, GDC Technics needed to be able to link its engineering data with its certification data within the 3DEXPERIENCE platform.



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– Paul Richens, Head of the Office of Airworthiness, GDC Technics

"The industry-specific processes within the 3DEXPERIENCE platform have allowed us to bring the engineering and certification departments together into the same workspace," said Stephen Tiernan, head of design organization at GDC Technics. "The certification program is about linking requirements and source documents so that a certification engineer can easily locate a document, link it to a project and ensure the final requirement set is covered. It's all in one location; it's already a built-up database, the information is already in there, you just have to select it."



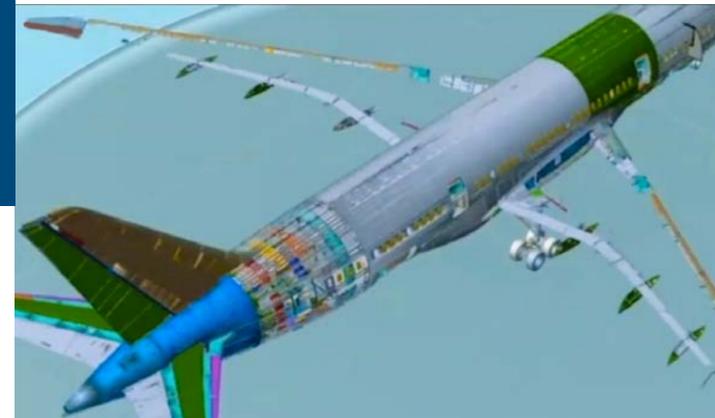
GDC Technics uses ENOVIA on the 3DEXPERIENCE platform to configure engineering data

Not only is GDC Technics now confident that its certifications are always up to date, but it has empowered its engineers to work more productively and complete projects faster.

"In discussions with Dassault Systèmes, we felt their industry-specific solution provided a lot of advantages," said Paul Richens, head of the office of airworthiness at GDC Technics. "A lot of systems that are out there at the moment are outdated, including our own at the time, but like most industries it's really difficult to allocate time to update or change tools unless you can assign value. It became very clear from the outset that the 3DEXPERIENCE platform would reduce our timescales and therefore reduce our cost to our client, making us more attractive in the marketplace."

FLUID WORKING

The departments for engineering and certification now work within the same digital workspace. This creates more efficient working processes and ensures that stakeholders are more aware of their colleagues' activities. Because all information is in one single location, a certification engineer can, for example, link documents to projects and document requirements more quickly.



A representation of an aircraft in the 3DEXPERIENCE platform where GDC engineers control configurations of engineering data across the global organization.

This allows GDC Technics to implement changes more rapidly and pass the time-savings and reduced costs onto the customer, increasing its competitive advantage.

"The platform is very efficient for end-to-end functionality right from the change description through to the embodiment of any modification on an aircraft; the main thing is efficiency, so now all of our documentation is all in one place," Tiernan said. The company also is saving costs internally as it is no longer necessary to manage and maintain multiple platforms for different departments.

"We feel as though it is a real step forward," Richens said. "It's a singular platform so you don't have to maintain several platforms at the same time; it's a platform that all the design engineers are used to using so it's easy to navigate."

Ultimately, digital continuity is leading to improved collaboration and encouraging an innovative mindset



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– Mark Reynolds, Operations Manager, GDC Technics

across the company, allowing GDC Technics to continue 'Engineering the Impossible' without losing sight of its customers' needs and certification authorities' requirements.

"To have a powerful platform such as Dassault Systèmes' 3DEXPERIENCE platform has enabled GDC Technics to be more fluid in the way that we work and has also enabled the departments to have a better understanding of how the company works," Reynolds said. "It helps us to deliver on time and meet our customer requirements and engineer the impossible."

More about the solution:

The Cleared to Operate industry solution experience transforms the execution of aircraft test and certification process to drive out costs while ensuring safety for on-time delivery.

Thanks to the 3DEXPERIENCE platform the solution accelerates the digital transformation by offering to authorities the virtual certification of a digital twin plane.

Benefits:

- Reduce cost and time to market
- Allow innovations and customization on aircraft
- Build confidence with aviation authorities

Focus on GDC Technics

GDC Technics is an industry leader in aircraft engineering and technical services, modifications, electronic systems, R&D, government services and MRO services with locations across North America, Europe, Asia and Africa.

Products: Engineering and technical services, modifications, electronic systems, R&D, and maintenance, repair and overhaul services for aerospace.

Headquarter: Fort Worth, Texas, US

For more information
www.gdctechnics.com

Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

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