AIRXPERIENCE

2021

FLY TO OUR FUTURE

JUNE 22 > 25
2021

WELCOME TO DASSAULT SYSTÈMES' AIREXPERIENCE 2021

Today's aerospace innovators are reimaging the future of flight. OEMs and suppliers alike seek to deliver new, safe and sustainable modes of transportation while providing optimal mobility experiences. Developing complex vehicles for global and regional markets requires a new way to conceptualize, design, manufacture, test, certify and sustain new air and space vehicles.

The virtual event will provide you with all the latest technological insights on the Aerospace & Defense industry to accelerate your business and become more competitive.
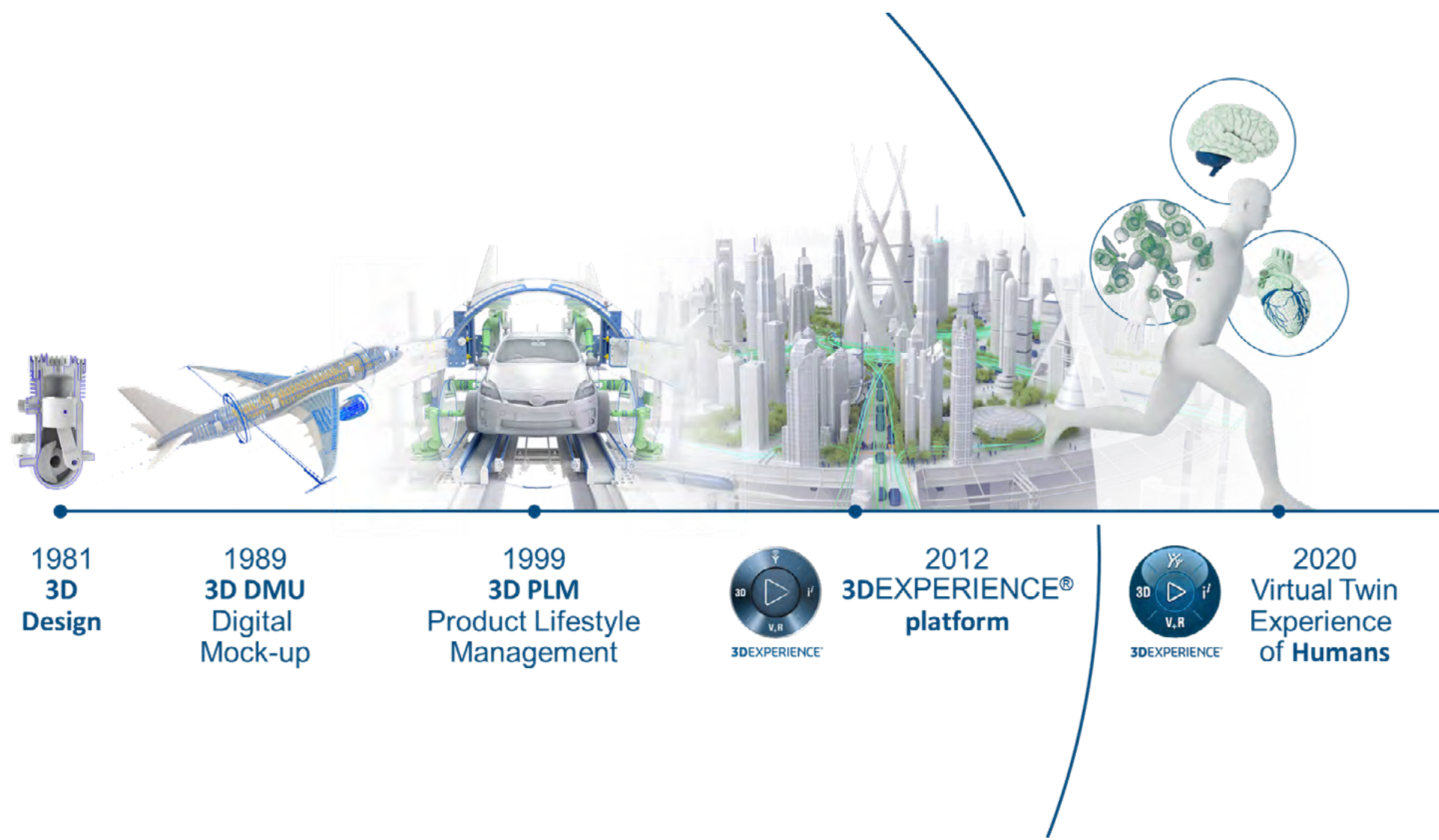
Event Themes:

- **Aerospace Supply Chain**: from siloed to value network – so that you can increase transparency and enhance collaboration

- **Defense**: from mission engineering to sustainment – so that you can drive program efficiencies and drive costs down of operations

- **Space**: from concept to orbit – so that you can drive efficient design with product line efficiency

LEGACY

Dassault Systèmes has a proven track record as a **catalyst and enabler of the world's leading industrial transformations.**
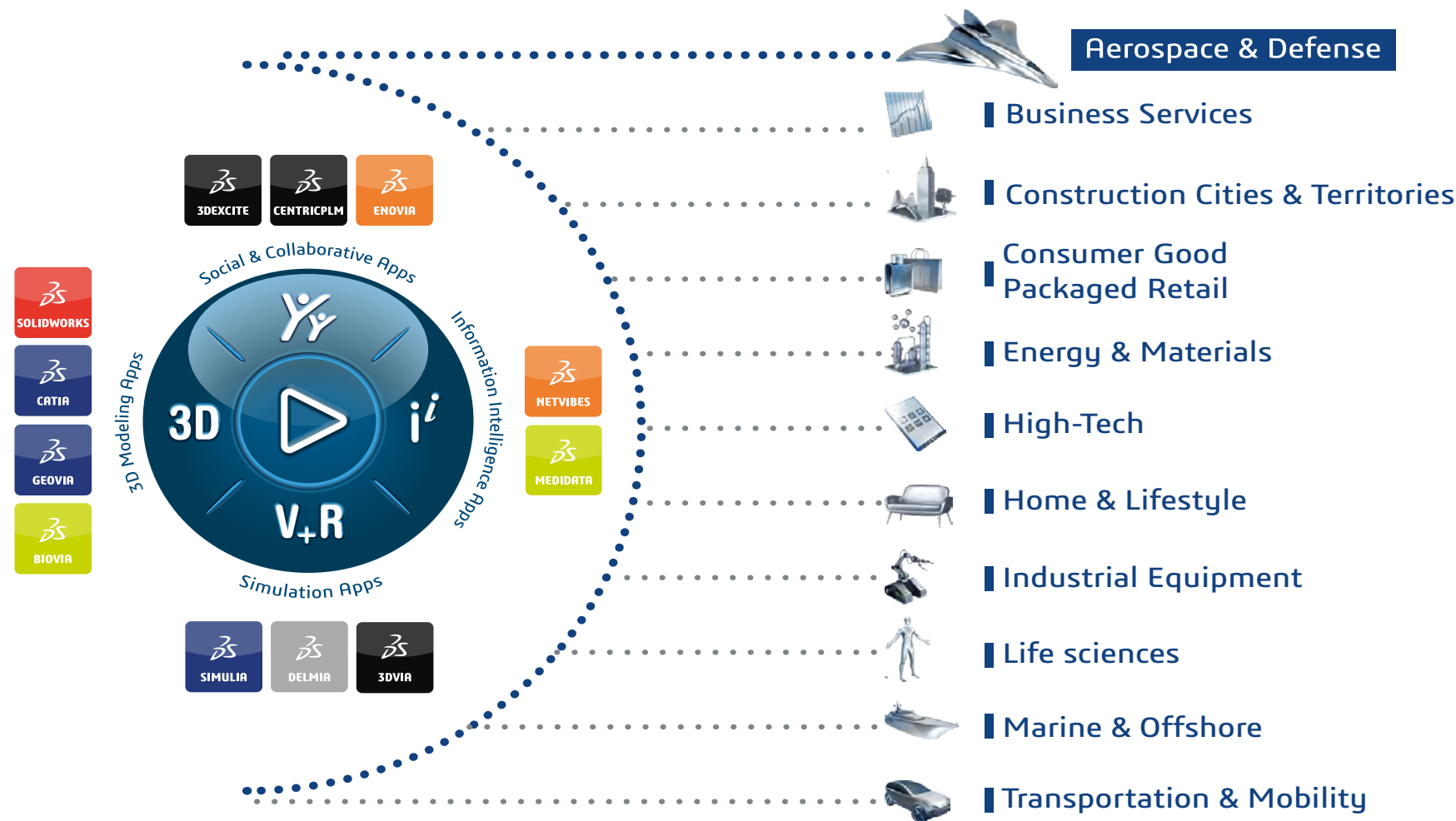
Every decade, we have partnered with manufacturers to disrupt how products are designed, manufactured and sustained, and we continue to rethink development, production and support processes and methods.

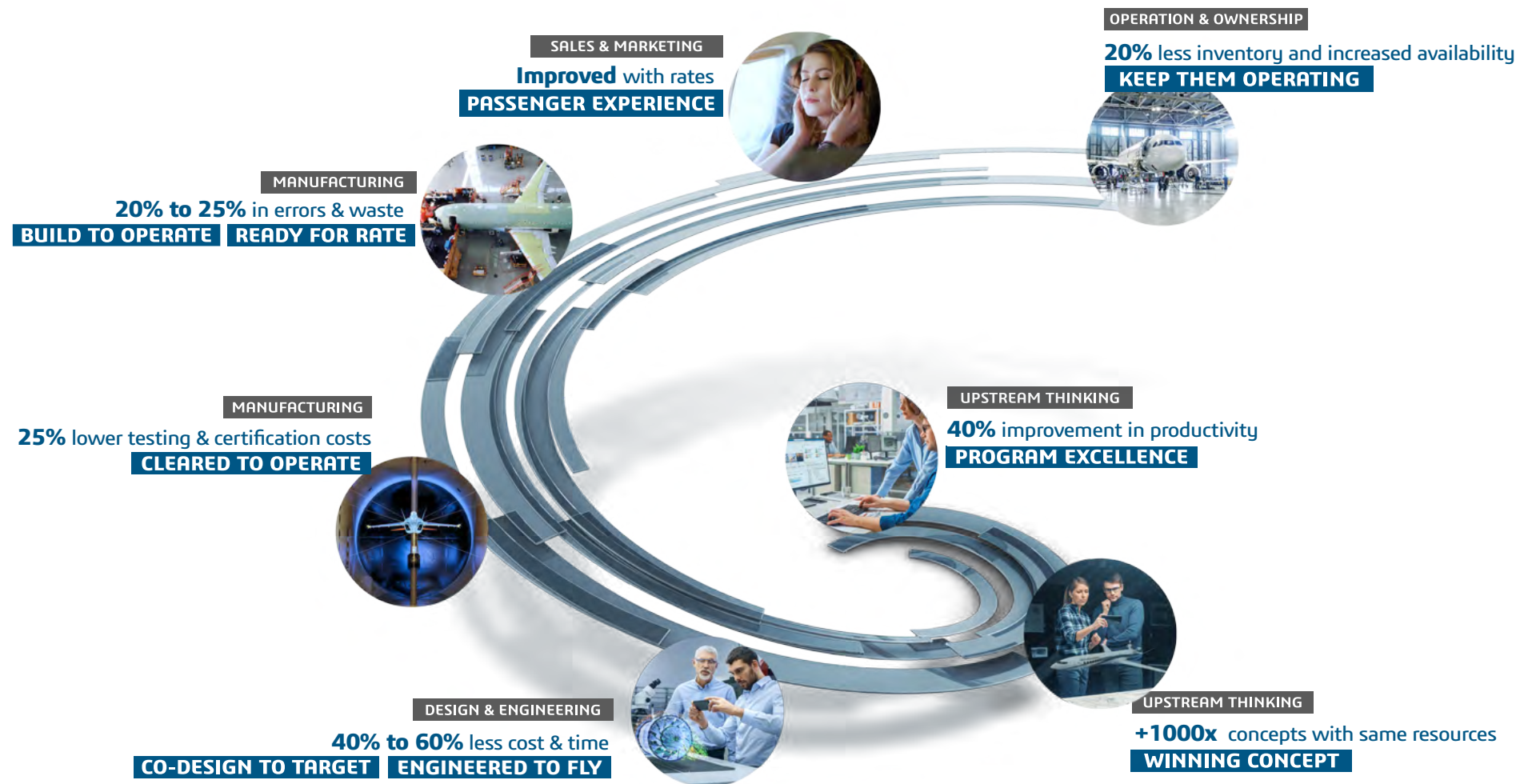| 1981	1989	1999	2012	2020
3D Design	**3D DMU** Digital Mock-up	**3D PLM** Product Lifestyle Management	**3DEXPERIENCE®** platform	Virtual Twin Experience of **Humans**

THE 3DEXPERIENCE® PLATFORM

The **3DEXPERIENCE** platform is a Business Experience Platform for knowledge and know-how, a game-changing collaborative environment that empowers businesses and people to innovate in an entirely new way.

The platform is powered by Dassault Systèmes' **thirteen brands** delivering applications that enable social and collaborative interactions, 3D modeling, simulation and optimization, and information intelligence. It serves **eleven distinct industries** with tailored industry solutions to address the specific regulations and challenges of each.

Aerospace & Defense

Business Services

Construction Cities & Territories

Consumer Good Packaged Retail

Energy & Materials

High-Tech

Home & Lifestyle

Industrial Equipment

Life sciences

Marine & Offshore

Transportation & Mobility

AEROSPACE & DEFENSE INDUSTRY SOLUTIONS

Across the Aerospace & Defense industry, rising customer expectations (lower costs, higher standards and increased capabilities) along with growing program complexity continually make it more challenging to compete. As systems become more complex to design, build and deliver, OEMs and suppliers need to **accelerate innovation, drive efficiencies and move to the factory of the future** to allow for **greater agility on production rates**. This requires a new way to conceptualize, design, manufacture, test, certify and sustain new air and space vehicles.

OPERATION & OWNERSHIP
20% less inventory and increased availability
KEEP THEM OPERATING

SALES & MARKETING
Improved with rates
PASSENGER EXPERIENCE

MANUFACTURING
20% to 25% in errors & waste
BUILD TO OPERATE   **READY FOR RATE**

UPSTREAM THINKING
40% improvement in productivity
PROGRAM EXCELLENCE

MANUFACTURING
25% lower testing & certification costs
CLEARED TO OPERATE

DESIGN & ENGINEERING
40% to 60% less cost & time
CO-DESIGN TO TARGET   **ENGINEERED TO FLY**

UPSTREAM THINKING
+1000x concepts with same resources
WINNING CONCEPT

AEROSPACE SUPPLY CHAIN: FROM SILOED TO VALUE NETWORK

Today, supplier-created parts and content represents **50%-60%** of the value of an aerospace system. Relentless price pressures are compelling aircraft manufacturers and suppliers to reinvent the way they work with the supply chain. The new model requires a closer partnership to improve visibility, on-time delivery and first-time quality.

To achieve these, suppliers need to transform how they interact, providing higher visibility to OEMs to get tighter and seamless integration. From a siloed and linear ecosystem, the supply chain can become a value network. A network which ensures full access to any required knowledge, know-how, skills and talents as well as real-time social collaboration between individuals, groups or organizations.

Aircraft manufacturers who can't find strong suppliers may seek to acquire and "insource" high value suppliers. The entire supply chain is undergoing a shift to effectively compete in the aerospace market.
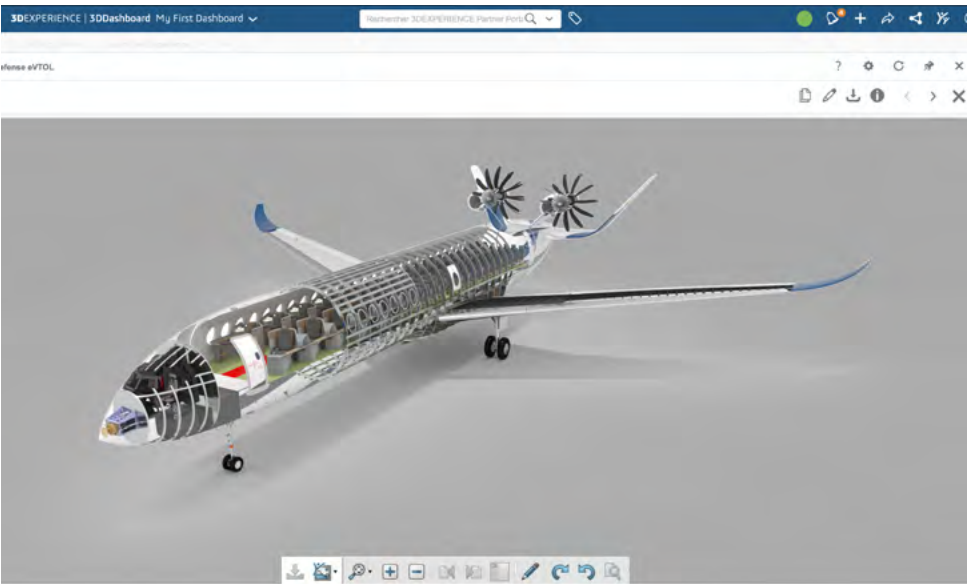
Solutions:

Complex programs in broad ecosystems require seamless collaboration and communication with customers as well as the supply chain value network. Dassault Systèmes provides Social & Collaborative industry solutions that "Connect the Dots" across organizations and locations to enable companies to develop new ways of working.

The **Program Excellence** industry solution enables companies to optimize their product strategy and reach a high level of efficiency in program execution. Companies can implement their digital transformation around governance, configuration, collaboration and analytics.

The **Engineered to Fly** industry solution helps suppliers win more business and more efficiently deliver on time, on budget, on target. Best in class engineering, simulation and project tools delivered on a single platform can improve productivity up to 40 percent while reducing total cost of ownership at least 15 percent.

Proof Point:

Taiwan-based maintenance, maintenance, repair, and overhaul (MRO) service provider **Evergreen Aviation Technologies (EGAT)** implemented the **3D**EXPERIENCE platform to collaborate more effectively with its customers, integrate processes, and respond faster to their needs, all while speeding up its product development capabilities and improving asset traceability.

DEFENSE: FROM MISSION ENGINEERING TO SUSTAINMENT

An unprecedented period of defense modernization is occurring, fueled by increased defense budgets and technology breakthroughs like hypersonics and autonomous systems. Countries around the globe are significantly investing in the development of more technology capable, sustainable and increasingly flexible solutions to mitigate evolving threats.

This investment pace is beginning to be challenged based on the significant impact across the world to mitigate COVID-19 costs. Countries face a complex challenge in the current time of striking the right balance between investing in next-generation platforms that offer more capability and keeping older but still vital defense assets in service today.

How can we do both? By enabling each mission scenario to one) reduce sustainment and support costs of aging assets, and two) re-invest the savings into technology breakthroughs, complex systems of systems, and interoperability.

Digital transformation using a platform approach that enables faster and more accurate decision-making, integrated mission planning, agile capability development, and smart sustainment, makes both mission scenarios above viable with one strategy.

Solutions:

Dassault Systèmes provides best in class industry solution experiences delivered by the **3D**EXPERIENCE platform to enable the benefits of robust models and processes embodied in an enduring, secure, authoritative source of truth throughout a systems life cycle.
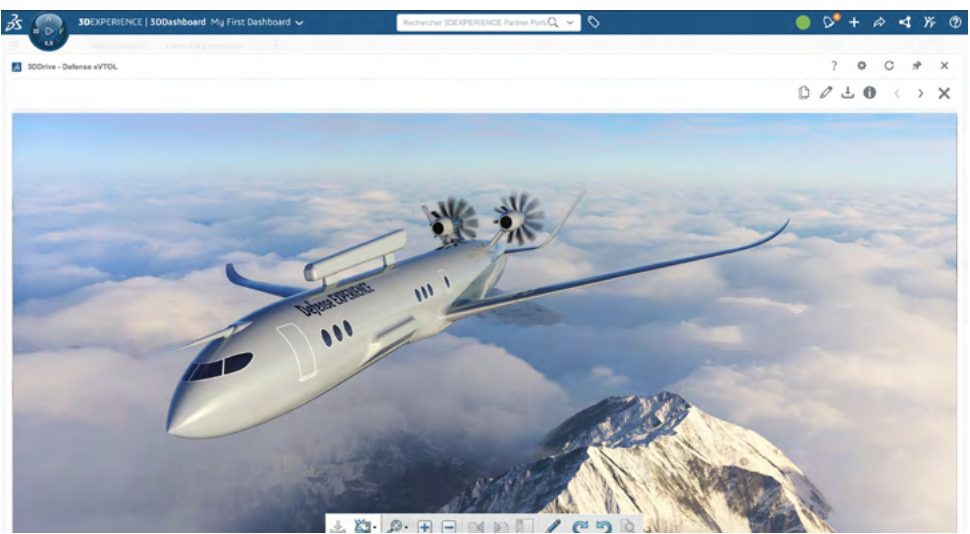
The **Winning Concept** industry solution experience establishes a framework to model every aspect of the mission and system of system complexities through digital mission engineering.

The **Co-Design to Target** industry solution experience facilitates multi-disciplinary simulation of the system, subsystem and component designs and reduces their associated processes by 40-60%.

The **Keep Them Operating** industry solution experience ensures optimization of operating expenses, inventory reductions by 20%, fleet availability and mission readiness targets. Smart sustainment improves fleet performance and availability as validated by virtual twins of the aging and next generation assets augmented by data science and AI.

Proof Point:

Lockheed Martin' Skunk Works adopted the **3D**EXPERIENCE platform to deliver on the quality and the schedule their customers expect. They benefit from a single authoritative source of truth, enabling them to drive greater efficiency and focus on affordability. The platform also allows them to make changes and get a very close tie between design and manufacturing, to influence design as they progress.

SPACE: FROM CONCEPT TO ORBIT

For the first 60 years of the Space Age, the space industry was the sole purview of government agencies. Now, private-sector companies are disrupting the space exploration and satellite industry as they race to produce increasingly sophisticated satellites and reusable launchers. The number of operational satellites orbiting the Earth – currently numbering 3,400 – could rise to several tens of thousands in the next 30 years. The industry is now being inspired and invigorated by a wave of entrepreneurs pioneering groundbreaking, new technologies.

How exactly, in this New Space era, can companies drive the frontiers of rocketry and satellite technologies?

With the right business platform, launcher and satellite companies can both shorten development time and achieve right first-time quality for 100% mission success.
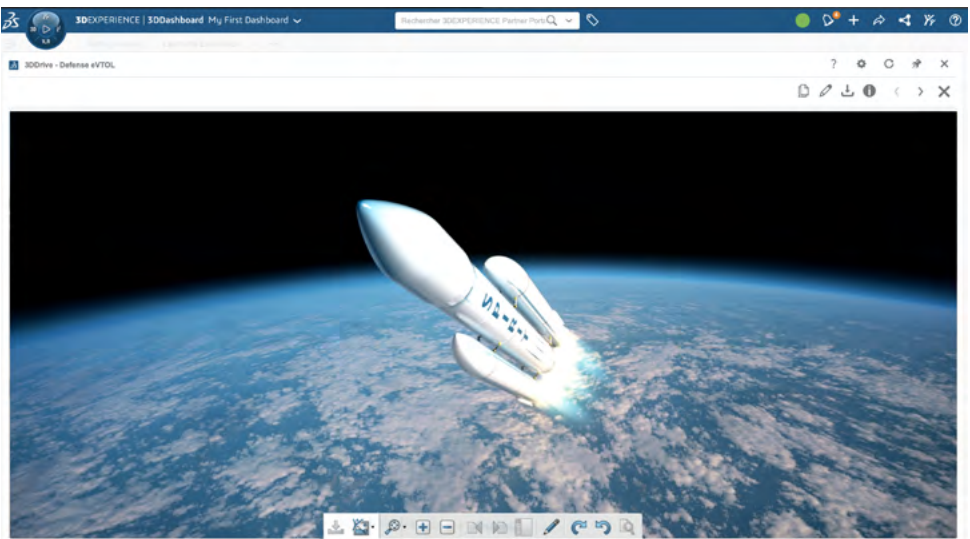
Solutions:

Delivering creative concepts, innovative designs and increasing production demand and flexibility is possible using the power of virtual universes. Dassault Systèmes provides industry solution experiences to integrate technology, processes and people throughout the product development lifecycle in order to develop more advanced, complex and capable space systems that can compete within the market and provide exquisite customer value.

The **Reinvent the Sky** industry solution experience provides a common product innovation platform on the cloud to gain significant advantage by enabling your company to be first to market with your space system. This solution supports requirements defintion, real time collaboration, and traceability from initial concept through manufacturing, verification and validation.

The **Winning Concept** industry solution experience increases success rates for new concepts and bid proposal wins by uniting proposal authoring, concept alternatives definition, and analysis trade processes on a single business platform. It enables your company to develop the best proposal to meet customer requirements for the right balance between technological capability, cost and schedule.

Proof Point:

Ball Aerospace has deployed the **3DEXPERIENCE** platform as its digital engineering solution. Through this collaboration, Ball Aerospace will leverage Dassault Systèmes' integrated platform with a unified data model and single user experience, to complement the company's digital transformation, and promote digital continuity through the use of the virtual twin across its defense and space products.
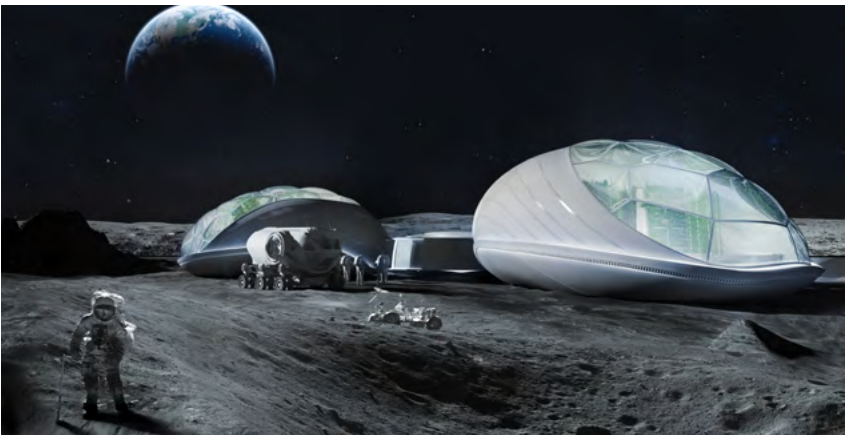
EXPLORE OUR STORIES

What an exponential era we live in! The industry is redefining mobility beyond the evolution of traditional aircraft programs. Explore the solutions adopted by startups and established leaders transforming the urban air and space mobility markets.

Interstellar Lab

A research company creating closed-loop controlled environment habitats and biospheres generating and recycling food, water and air, uses the **3D**EXPERIENCE platform on the cloud to efficiently design and develop its first prototype, the BioPod. This self-sustaining greenhouse advances its mission to build space-ready villages containing the infrastructure and resources to support human life sustainably on Earth, the Moon and Mars.

Interstellar Lab is using the **Reinvent the Sky** industry solution experience based on the **3D**EXPERIENCE platform to seamlessly collaborate, and rapidly optimize and validate its designs. In one digital environment providing secure and instant access to the latest project data from anywhere at any time, team members in France and the U.S. combined their expertise and used a virtual twin to simulate and test the performance of the BioPod's structure in extreme climates, as well as that of its biological systems such as the optimal levels of oxygen, carbon dioxide and light levels for plants to grow.

The National Institute for Aviation Research

The National Institute for Aviation Research (NIAR) at Wichita State University (WSU) is working with the US Air Force to develop virtual twins of legacy aircraft as part of a sustainment program aimed at increasing airframe mission readiness. It needed an integrated virtual environment to build full-scale virtual twins and accomplish the contract requirements of the program.

Supported by Dassault Systèmes' **Keep Them Operating** industry solution experience on the **3D**EXPERIENCE platform, NIAR will take the B-1 Lancer aircraft completely apart, scan every single structural element and digitally reassemble the aircraft to create virtual twins for future sustainment activities. The platform serves as the hub for visualizing, analyzing and predicting the aircrafts' performance.

With a full-scale, operational virtual twin of its legacy aircraft on the **3D**EXPERIENCE platform, the US Air Force will create a living "medical record" to carry out predictive maintenance, identify structural issues and manage repairs and part replacements cost effectively. The virtual twin opens the door to achieve the best possible aircraft sustainment and fleet readiness. A virtual twin also allows for testing prototypes of new parts and repairs, and even supports a change in mission by understanding the impact the new mission may have on the life of the particular B1.

PARTNER TO ACCELERATE FROM CONCEPT TO OPERATIONS BY 50%

With the **3D**EXPERIENCE platform, you can:

- **Break down** the silos to innovation by developing new ways of working across teams

- **Accelerate program maturity with digital continuity** across engineering, manufacturing & business functions

- **Drive flexible production** by combining virtual planning and real operations for continuous improvement

- **Create new business opportunities** with the full potential and controlled investment of cloud solutions.

More about **3D**EXPERIENCE for Aerospace & Defense at https://ifwe.3ds.com/aerospace-defense

---

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

Dassault Systèmes, the **3D**EXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 250,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

3DEXPERIENCE

3DS DASSAULT SYSTEMES | The **3D**EXPERIENCE® Company