



Projects Portfolio

Desain

Teknik Indonesia

*Engineering Solutions,
Delivering Real Impact*

INNOVATIVE ENGINEERING SERVICE



Projects Customer

DTI services and products are used in the following countries.



ETC..

About Us

Vision

To become a world-class engineering company founded on Swiss–Indonesian integrity, with a strong focus on innovation, precision, and global collaboration.

Mission

1. To lead with integrity based on honesty, transparency, and accountability.
2. To deliver competitive products and services by strengthening innovation in CAD/FEM, prototyping, and precision manufacturing.
3. To develop human capital and a Swiss–Indonesian corporate culture by embedding discipline, precision, and care, while continuously enhancing employee competencies.
4. To strengthen national competitiveness by supporting product development for national and global industries, and by fostering collaborative development as a pathway for competency expansion and innovation.
5. To create sustainable value for shareholders, employees, society, and the environment through efficiency and social responsibility.

Products & Services

- Interior Vehicle
- Special Purpose Machine
- Checking & Jig Fixture
- Product Development

Our Team



Interiors Vehicle Design

Description

Interior design plays a crucial role in passenger comfort, safety, and overall travel experience. DTI collaborates with vehicle manufacturers to design and develop functional, ergonomic, and aesthetically refined train interiors. Our interior design solutions cover seating layout, handrail and grab pole placement, wall paneling, and passenger circulation space ensuring compliance with safety standards while enhancing passenger comfort.

Technical Advantages

Ergonomic Seating & Layout Design

Optimizes seating arrangement and passenger flow to maximize comfort and space efficiency within the cabin.

Material & Component Integration

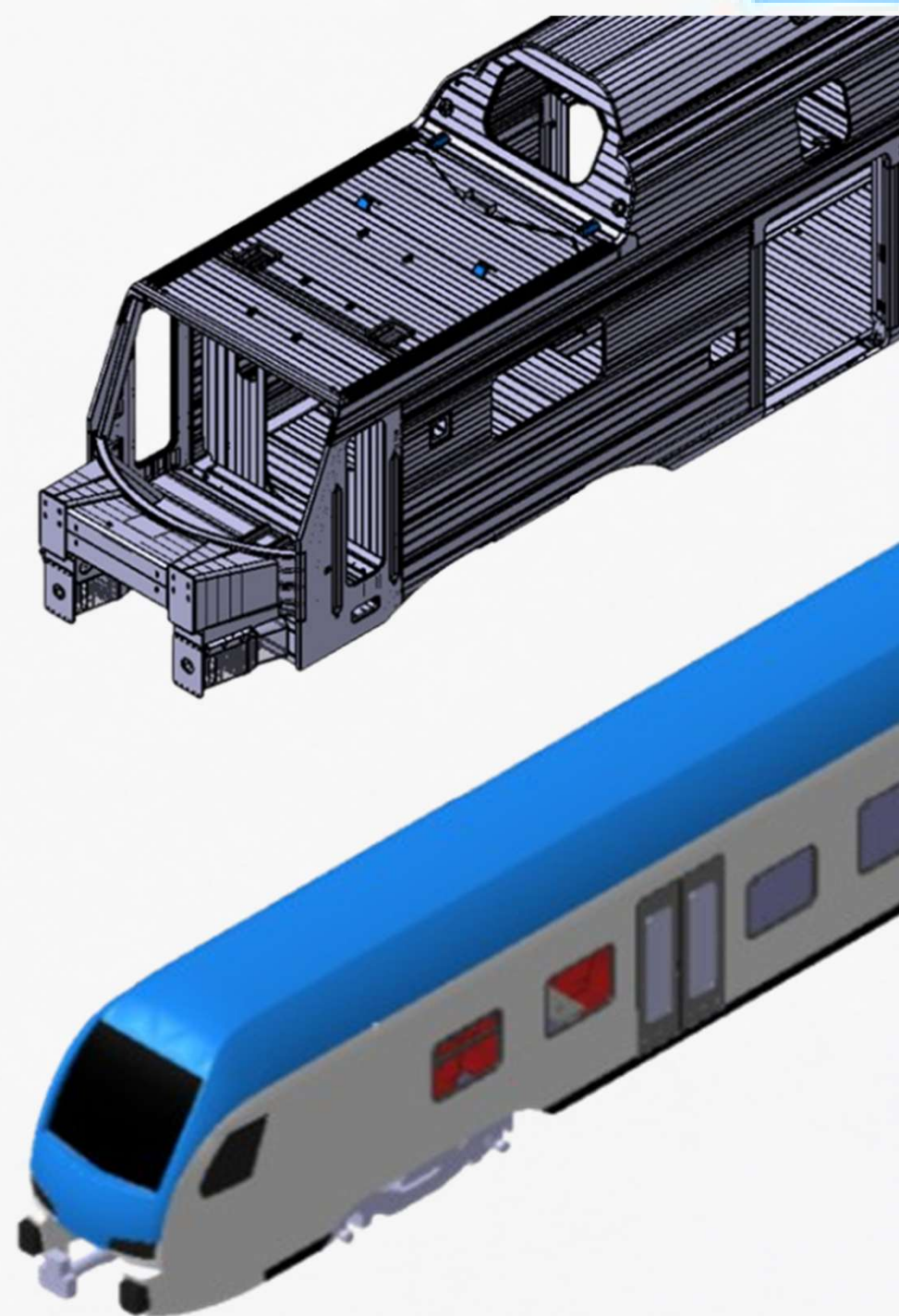
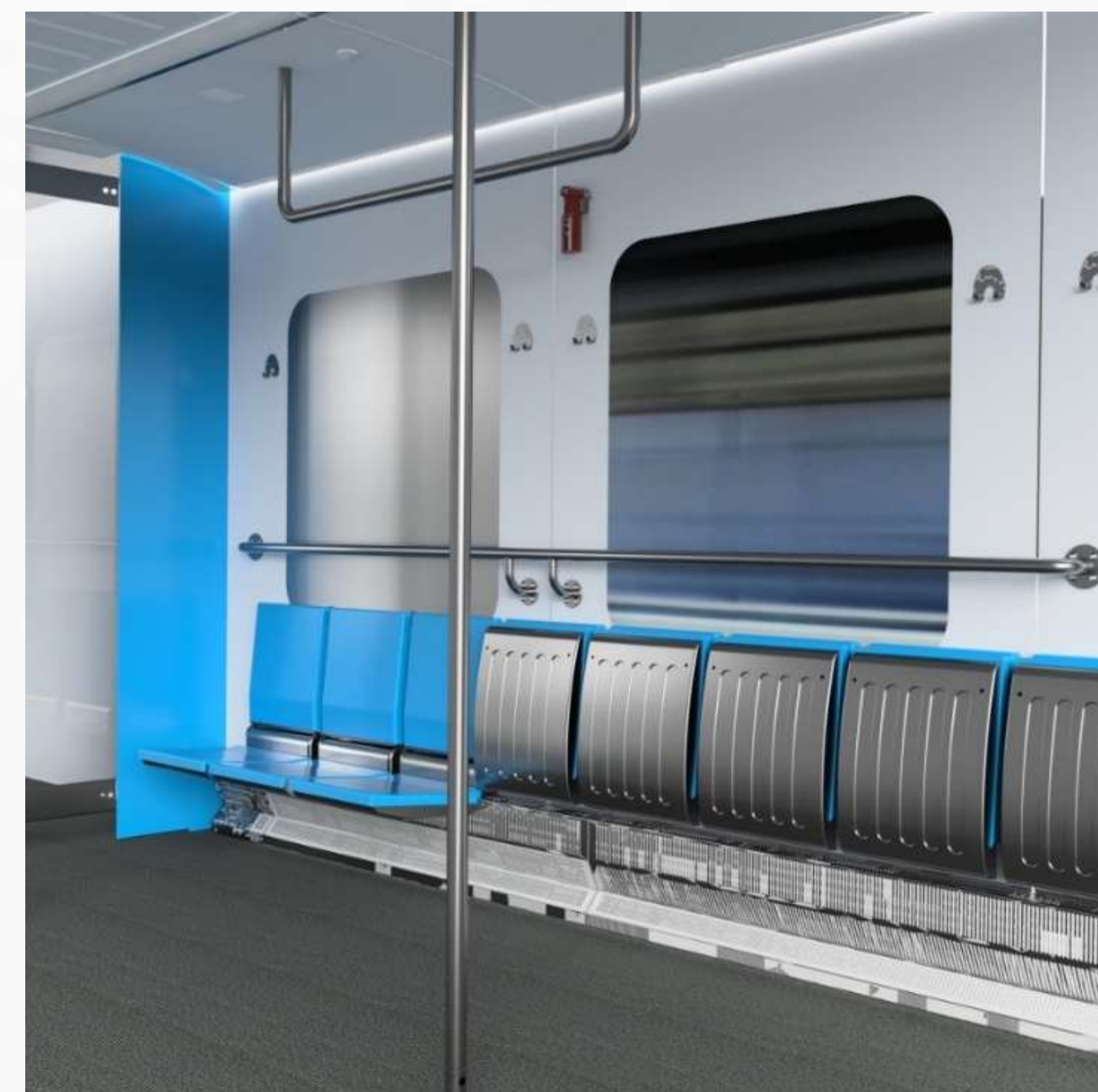
Ensures proper fitting and alignment of interior components, including wall panels, handrails, and grab poles, for both durability and passenger safety.

Compliance with Safety & Accessibility Standards

Designed to meet railway safety regulations, including accessibility features for passengers with mobility limitations.

Tasks

- Model for CFD Simulation
- Surface / Solid Model
- DFMA Drawing



Jig: Assembly Aircraft N219

Description

The year 2025 marks a milestone for the Indonesian aerospace industry. With the N219 "Nurtanio" aircraft designated a National Strategic Project, PT Dirgantara Indonesia (PTDI) is making a significant leap in manufacturing capacity. The primary focus of the 2025 Jig Assy Project is to modernize the production line through jig assembly. DTI's task in this project is to create the Detailed Engineering Design (DED) for assembly jigs and drilling system holder jigs.

Technical Advantages

Jig Assembly

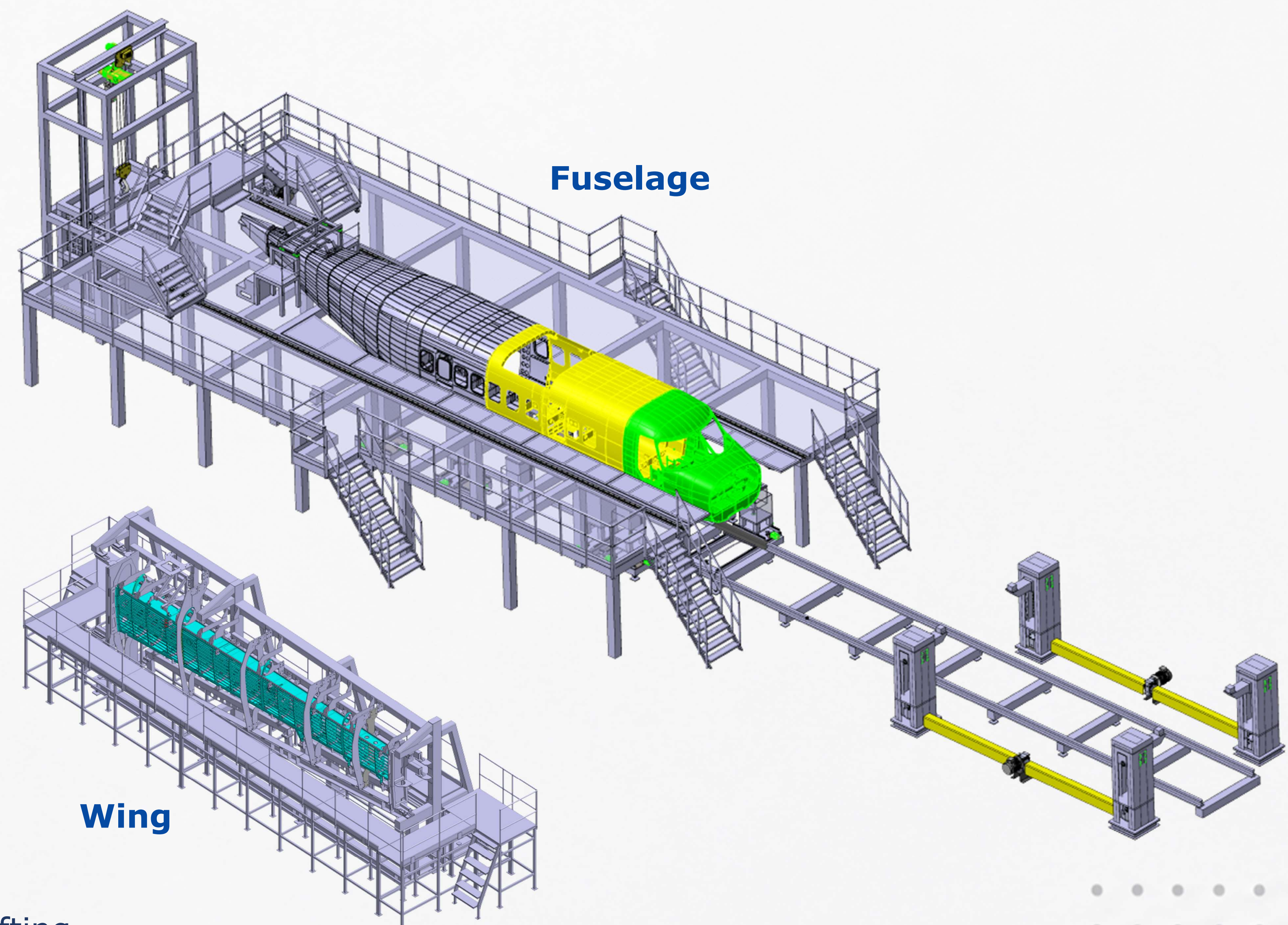
Updating the tooling infrastructure in the wing area and main platform to ensure higher geometric accuracy and more efficient assembly times.

Robotic Drilling System

Implementation of an automated (robotic) drilling system on the N219 structure, minimizing human error and improving the quality of mass production repetitions.

Digitalization & SAP Integration

Synchronization of production data infrastructure through the latest SAP system ensures real-time monitoring of every assembly stage for streamlined supply chain management.



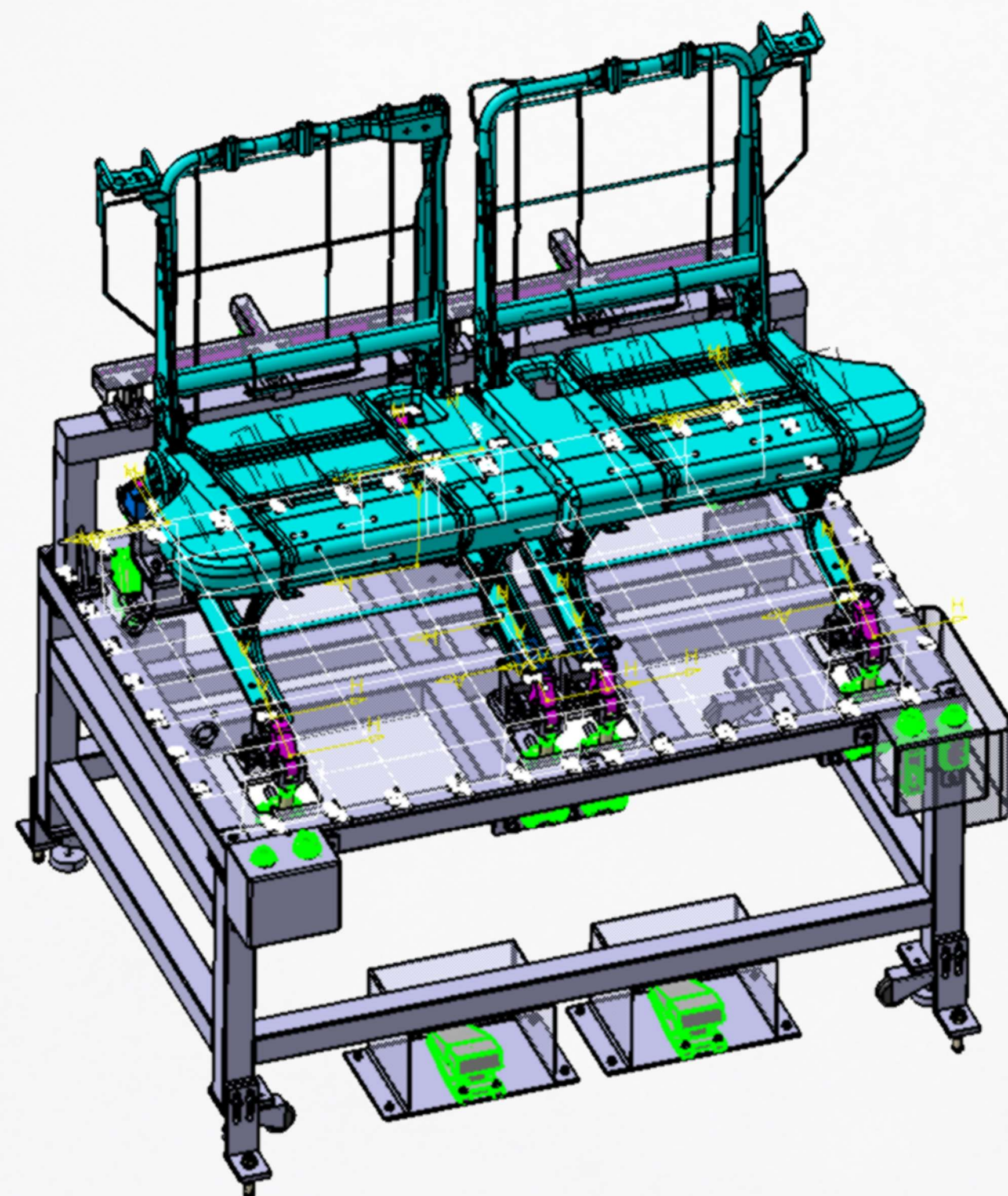
Tasks

- Mechanical Design-Drafting

Checking Fixture: Seat Passenger Car

Description

In the global automotive manufacturing industry, seat perfection is not only about comfort, but also about precise integration with the vehicle's structure. In 2021, DTI, to support Toyota Boshoku Indonesia (TBINA), created the Checking Fixture Seat to validate the geometry and critical points on the rear seat frame of the RR2 560 B type, ensuring that each seat produced meets very tight dimensional tolerances.



Technical Advantages

High-Precision Datum Verification

Uses accurate reference points (datums) to ensure the position of bolt holes and brackets is aligned precisely according to the digital design.

Go/No-Go Gauging System

Equipped with plug gauges and gap gauges that provide instant verification results, accelerating the quality control process on the production line.

Ergonomic Loading Interface

The fixture design allows operators to quickly place seat components while maintaining stability (zero-play) during inspection using a hydraulic system.

Tasks

- Design-Drafting
- Assembly
- Manufacturing
- Coordinate Measuring Machine (CMM) process

Checking Fixture: Fuel Tank Assembly

Description

The fuel tank is one of the most critical components in a vehicle. Even the slightest inaccuracy in dimensions or bracket position can have fatal consequences for vehicle safety and performance. In 2020, PT Adyawinsa Sekiperdana Indonesia (ASI) and DTI developed a solution through the Fuel Tank Assembly Checking Fixture. This Checking Fixture is specifically designed for comprehensive inspections of fuel tank assemblies.

Technical Advantages

Total Geometry Inspection

Verifies the outer contour and the alignment of the bracket points to the vehicle body with high accuracy.

Component Interface Checking

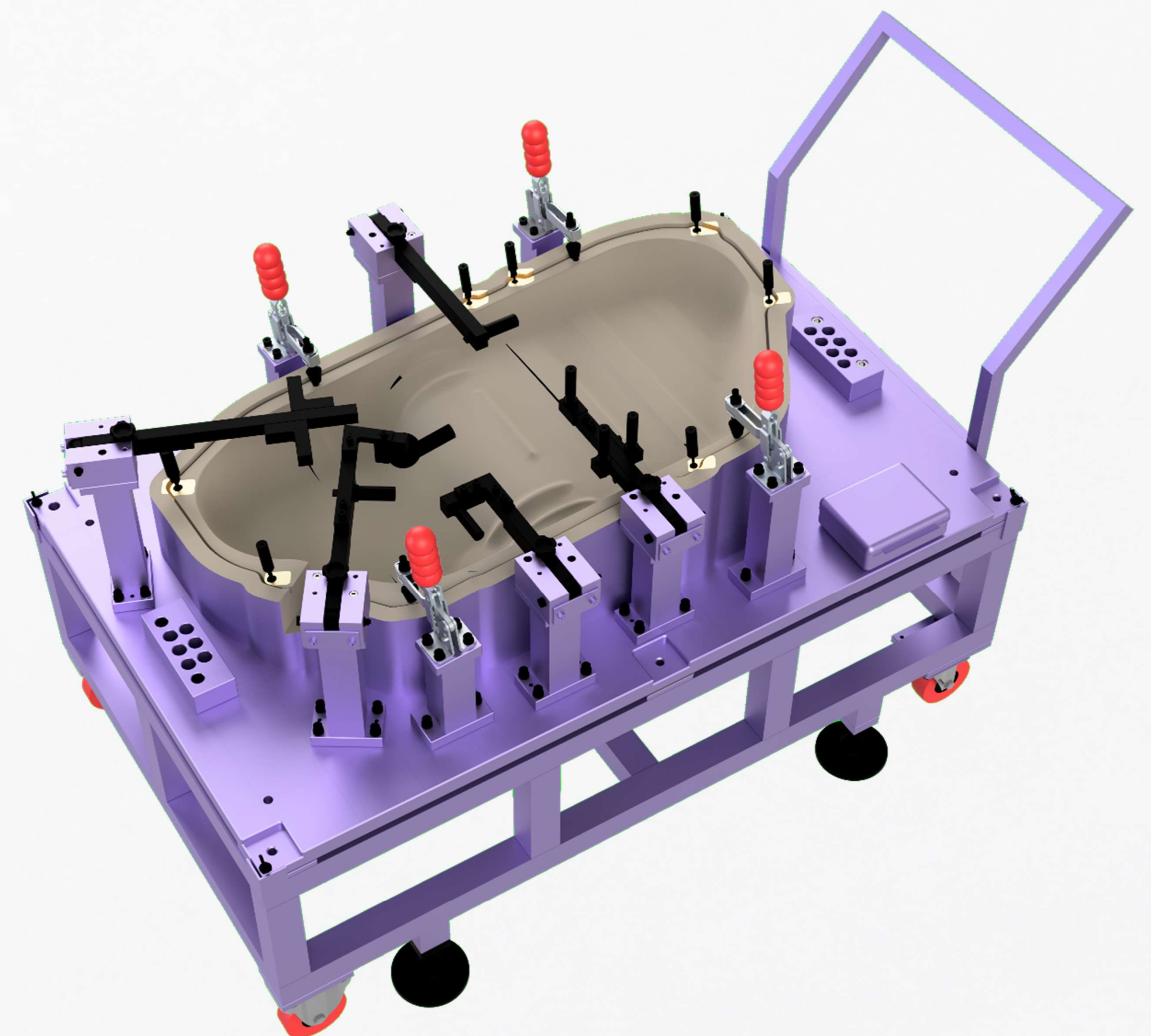
Ensures the fuel pump boss, vent line, and fuel filler hole are properly positioned to prevent leaks during final assembly.

Section Gauge & Pin Verification

Equipped with a master pin and section gauge measurement points to obtain numerical deviation data quickly and accurately.

Tasks

- Design-Drafting
- Assembly
- Manufacturing
- Coordinate Measuring Machine (CMM) process



Checking Fixture: Door Opener Components Car

Description

In the premium automotive world, interior details are more than just aesthetics; they're a symbol of quality and reliability. In 2017, Germany's Keyplastics and DTI created a Checking Fixture specifically designed for the door opener components on the BMW G2Y series. The Checking Fixture's primary focus is to ensure that each door opener mechanism fits perfectly before being installed in the vehicle's cabin.

Technical Advantages

Master Datum Verification

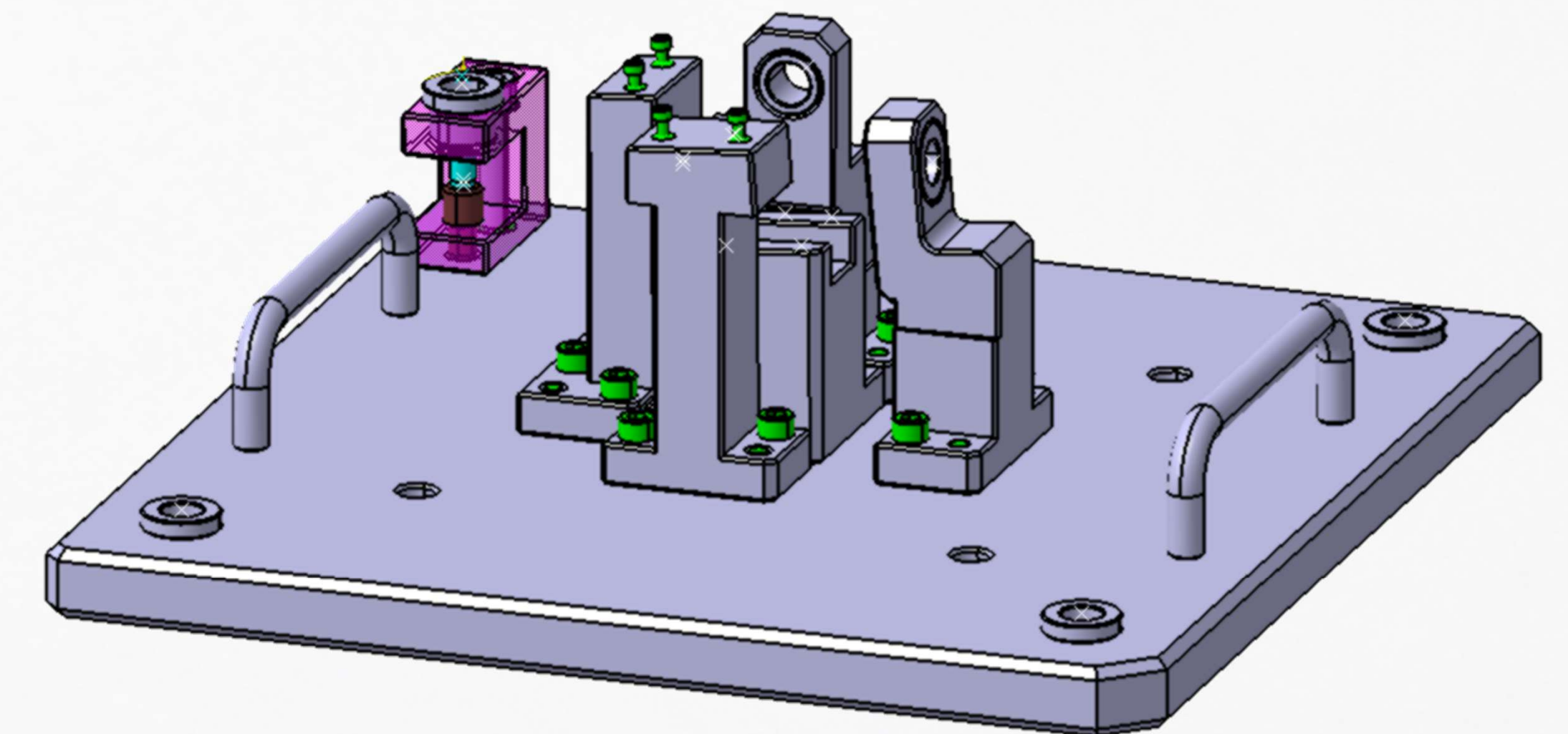
Uses the vehicle's original reference point coordinates to ensure the components are precisely installed on the door panel.

Complex Surface Matching

Designed to check complex surface contours on the G2Y series, ensuring gaps and flushness meet minimum tolerance standards using a dial gauge.

Durability & Material Stability

Built for use in Germany with stable base materials that are resistant to temperature fluctuations, ensuring consistent measurement accuracy over long-term use.



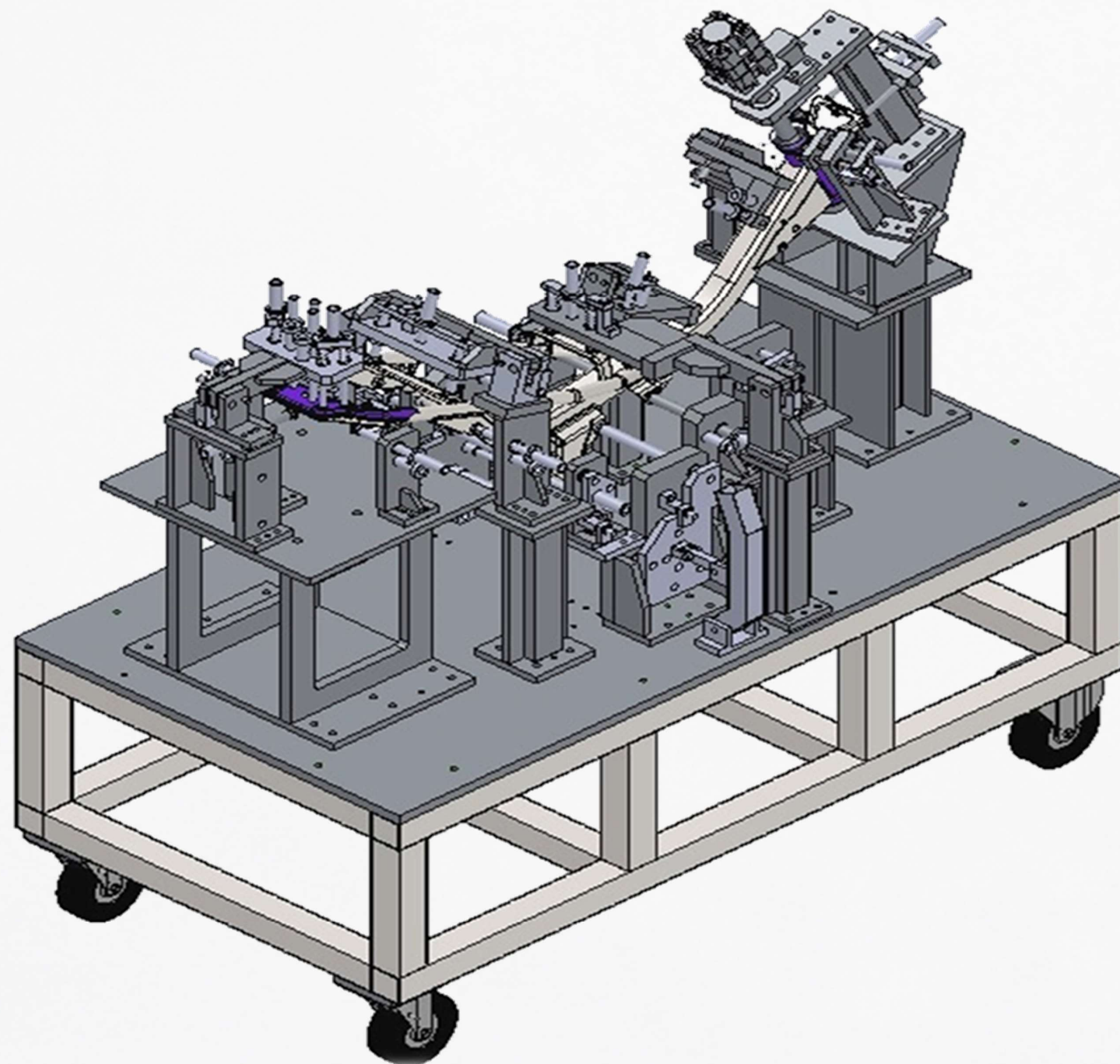
Tasks

- Design-Drafting
- Manufacturing
- Assembly
- Coordinate Measuring Machine (CMM) process

Jig: Inspection Frame

Description

In the two-wheeled vehicle industry, the frame is the soul of a vehicle. The balance, safety, and comfort of a two-wheeled vehicle depend heavily on the accuracy of its geometry. In 2017, PT TVS Motor Company Indonesia, with a purchase order to DTI, strengthened its quality control line with the Inspection Jig, a critical verification tool used to conduct a thorough dimensional audit on the U313 frame. This tool serves as a final check, ensuring every weld point and bend in the frame tube conforms to the design.



Technical Advantages

Multi-Point Datum Verification

Simultaneously checks the alignment of crucial points such as the steering head, swingarm pivot, and shock absorber mounting.

Go/No-Go Gauging System

Uses a manual pin gauge system that provides instant results regarding dimensional tolerances, ensuring only perfect frames enter the assembly line.

High-Rigidity Structure

The jig is constructed of steel to prevent tool deformation due to repeated use, ensuring long-term measurement consistency.

Tasks

- Design-Drafting
- Assembly
- Manufacturing
- Coordinate Measuring Machine (CMM) process

Jig: Welding Seat Passenger Car

Description

PT. Adient Indonesia, a leading automotive seat manufacturer, continues to push the boundaries of quality through the development of cutting-edge production equipment. The Jig Welding project, initiated in 2017, was specifically designed by DTI to handle critical structural components that serve as reference points in the seat frame welding process, which requires high accuracy.

Technical Advantages

Dual-Point Precision

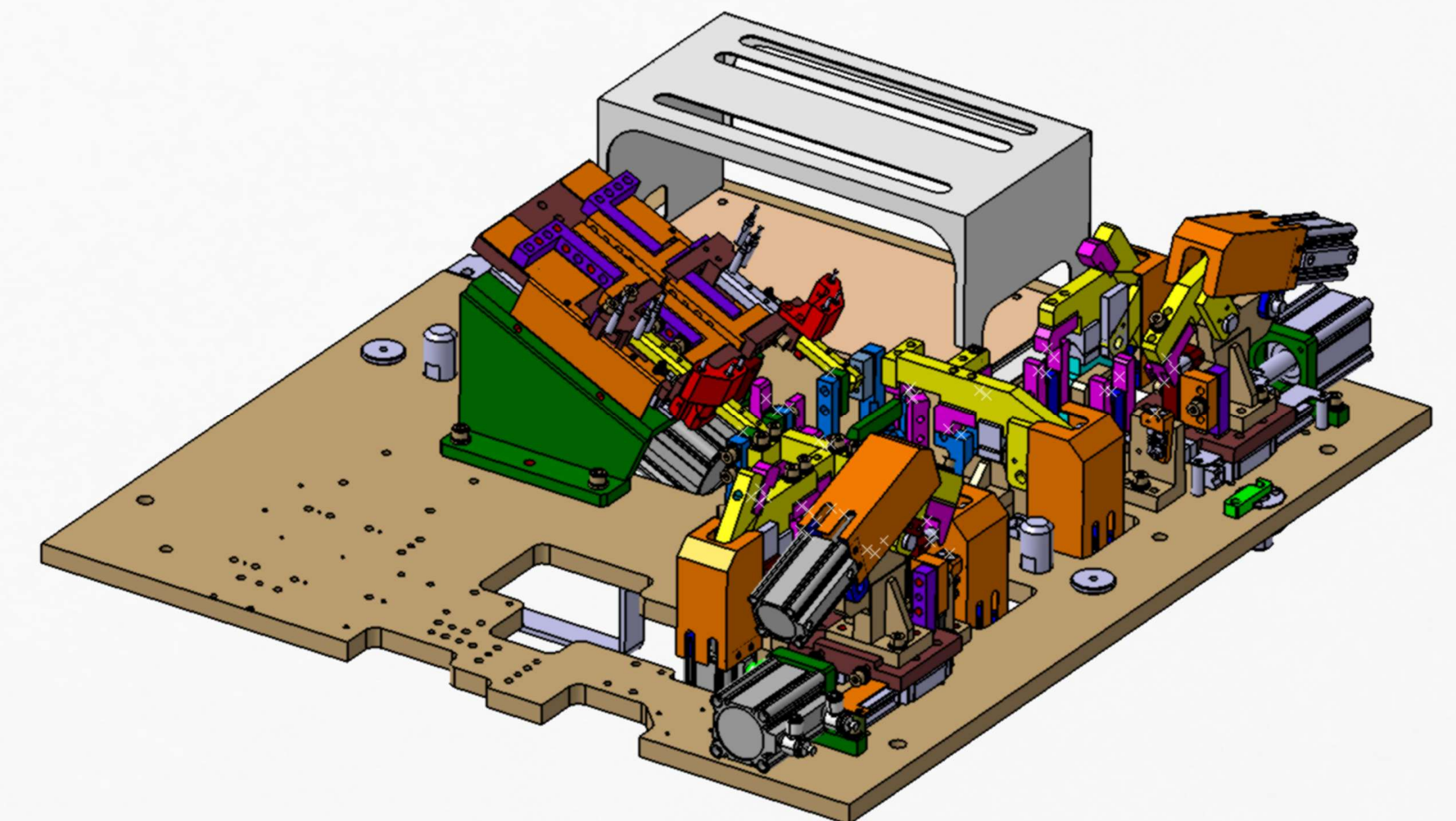
Enables simultaneous symmetrical welding at two points, minimizing thermal distortion of the material.

Front Seat Backrest Line

Dedicated specifically to the front seat backrest line, ensuring maximum structural strength for passenger safety in the event of a collision.

Ergonomic Clamping System

A clamping design ensures component position stability throughout the welding cycle.



Tasks

- Design-Drafting
- Manufacturing
- Assembly
- Coordinate Measuring Machine (CMM) process

Seat Console

Description

In the era of battlefield digitalization, the success of air missions depends not only on aircraft performance but also on the readiness of the operators behind the communications screen. As part of Defend ID's vision to achieve national defense equipment independence, PT Len Industri (Persero) and DTI created a special Seat Console for the military aircraft. This console seat was developed to accommodate the needs of mission operators on the military variant. This Seat Console is not just a seat but a tactical work unit that combines long-term comfort with an advanced technology communications console.

Technical Advantages

Mission-Critical Ergonomics

The seat design supports the operator's posture during long-endurance missions, minimizing fatigue and maintaining optimal mental alertness.

Military-Grade Durability

Constructed from lightweight yet durable materials that meet international military standards (MIL-STD), capable of withstanding high gravity loads and extreme aircraft vibrations.

Tactical Layout

The console configuration allows the operator to access the communications and navigation control panels within a minimal range of motion.

Tasks

- Design-Drafting
- Manufacturing
- Assembly



Air Intake Assembly Aircraft

Description

In general aviation, spare parts availability is often a challenge. In 2022, a community of aircraft and engineering practitioners took a proactive approach through the Reverse Engineering Air Intake Assembly project. This project was born from a passion for maintaining the airworthiness of small aircraft through modern digital modeling technology. The project focused on the technical reconstruction of a small aircraft's air intake system, which plays a crucial role in supplying clean air to the engine. Using DTI reverse engineering methods, existing physical components are transformed into accurate digital data for reproduction.

Technical Advantages

High-Accuracy 3D Scanning

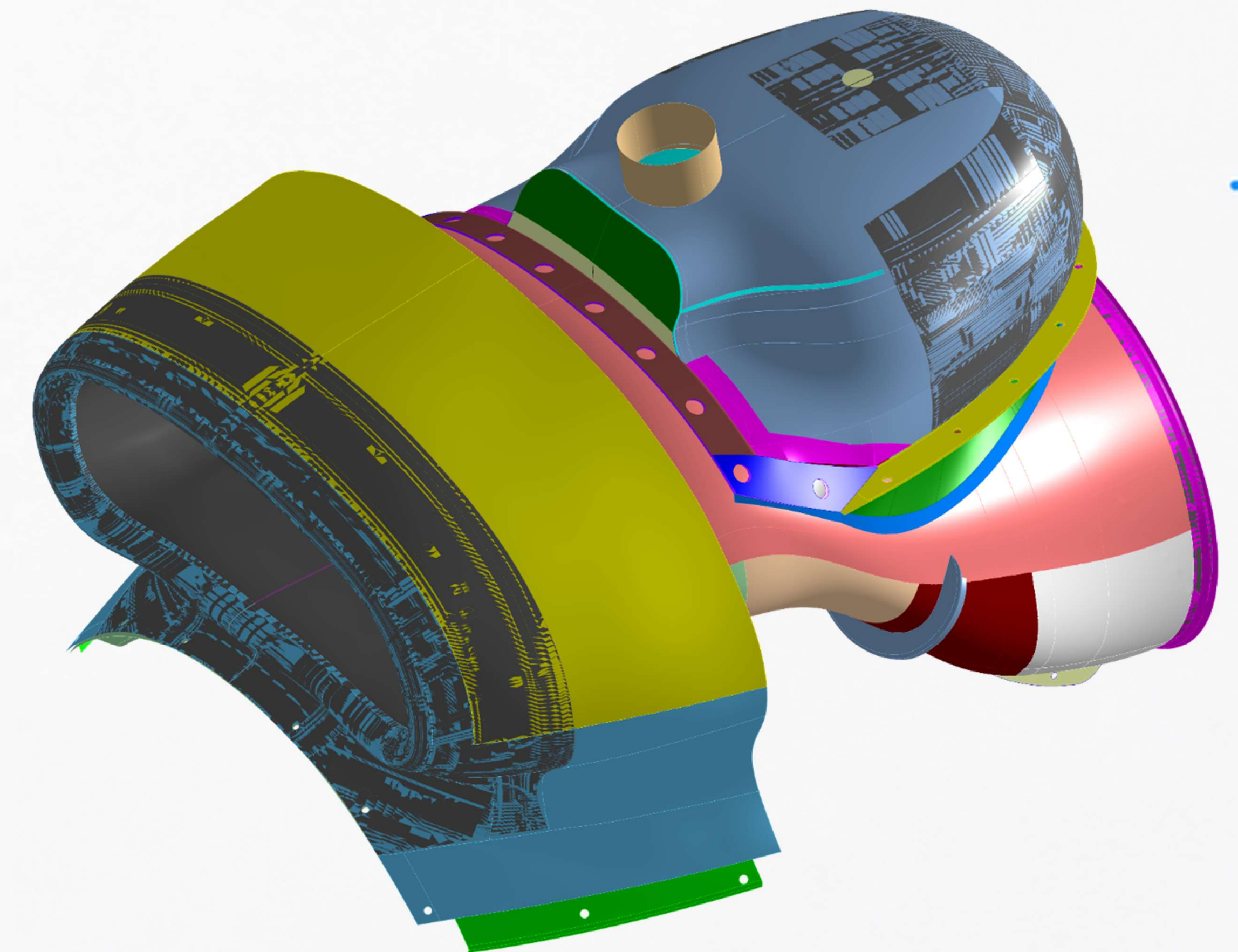
Scanning of the original component with a high level of precision to capture every aerodynamic curve and mounting point.

CAD Surface Reconstruction

Transforming the scanned data into a solid 3D CAD model allows for geometric analysis and design improvements if cracks or corrosion are found.

Material Selection

Selecting lightweight materials that are resistant to high temperatures and aircraft engine vibrations.



Tasks

- 3D Scanning
- Transformation to CAD model
- Design-Drafting

Dental Unit

Description

Independent, high-quality, and ergonomic medical devices are a top priority in the transformation of healthcare services in Indonesia. In 2021, PT Andini Sarana, a pioneering national dental instrument manufacturer, partnered with DTI to make a breakthrough through the Reverse Engineering Dental Unit project. This project aims to redefine the standards of dental patient chairs through a precision digital technology approach. The project involved deconstruction and in-depth analysis of the mechanical systems and ergonomics of dental patient chairs, ensuring they not only meet global standards but are also optimized for local needs.



Technical Advantages

Ergonomic Surface Reconstruction

Analysis of the contours of the backrest, headrest, and seat cushions to provide maximum lumbar support and improve patient comfort during medical procedures.

Smart Actuator Integration

Reengineering of the actuator system to produce smooth, silent chair motion, providing a worry-free treatment experience.

Material Resilience Analysis

Selection of durable, easily sterilizable, and clinical infection control-compliant structural and upholstery materials.

Tasks

- Measuring
- Design-Drafting

Knee Rehabilitation Device

Description

Recovery after knee injury or surgery requires consistent, precise movements to fully restore motor function. In 2025, the Faculty of Mechanical and Aerospace Engineering (FTMD) Bandung Institute of Technology (ITB) and DTI created the Knee Rehabilitation Device—a smart therapy device resulting from in-depth research in biomechanics and automatic control to help patients regain their independence of movement. This device was designed with a focus on combining structural strength and medical ergonomics. It aims to guide patients' knee movements through controlled, safe, and measurable Range of Motion (ROM) exercises.

Technical Advantages

Precision Adaptive Actuator

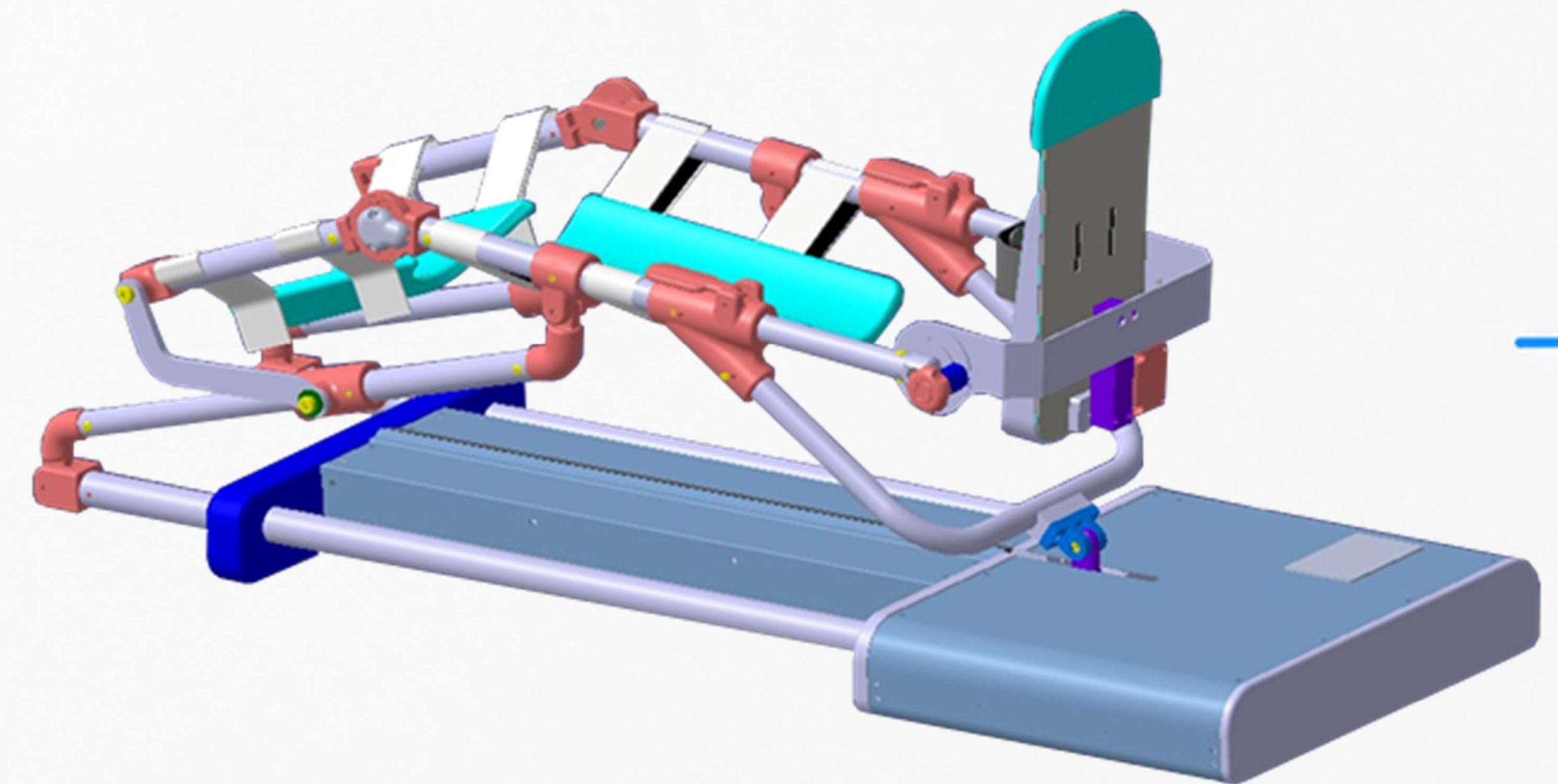
Uses a smooth drive system that automatically adjusts the load and bending angle according to the patient's physical limitations and recovery progress.

Ergonomic Lightweight Structure

Utilizing lightweight yet sturdy materials ensures the device is comfortable to use for long periods without putting stress on other parts of the patient's body.

Programmable Therapy Protocols

Various exercise modes are available, ranging from passive (Continuous Passive Motion) to active, which can be custom-programmed according to the recommendations of a medical rehabilitation specialist.



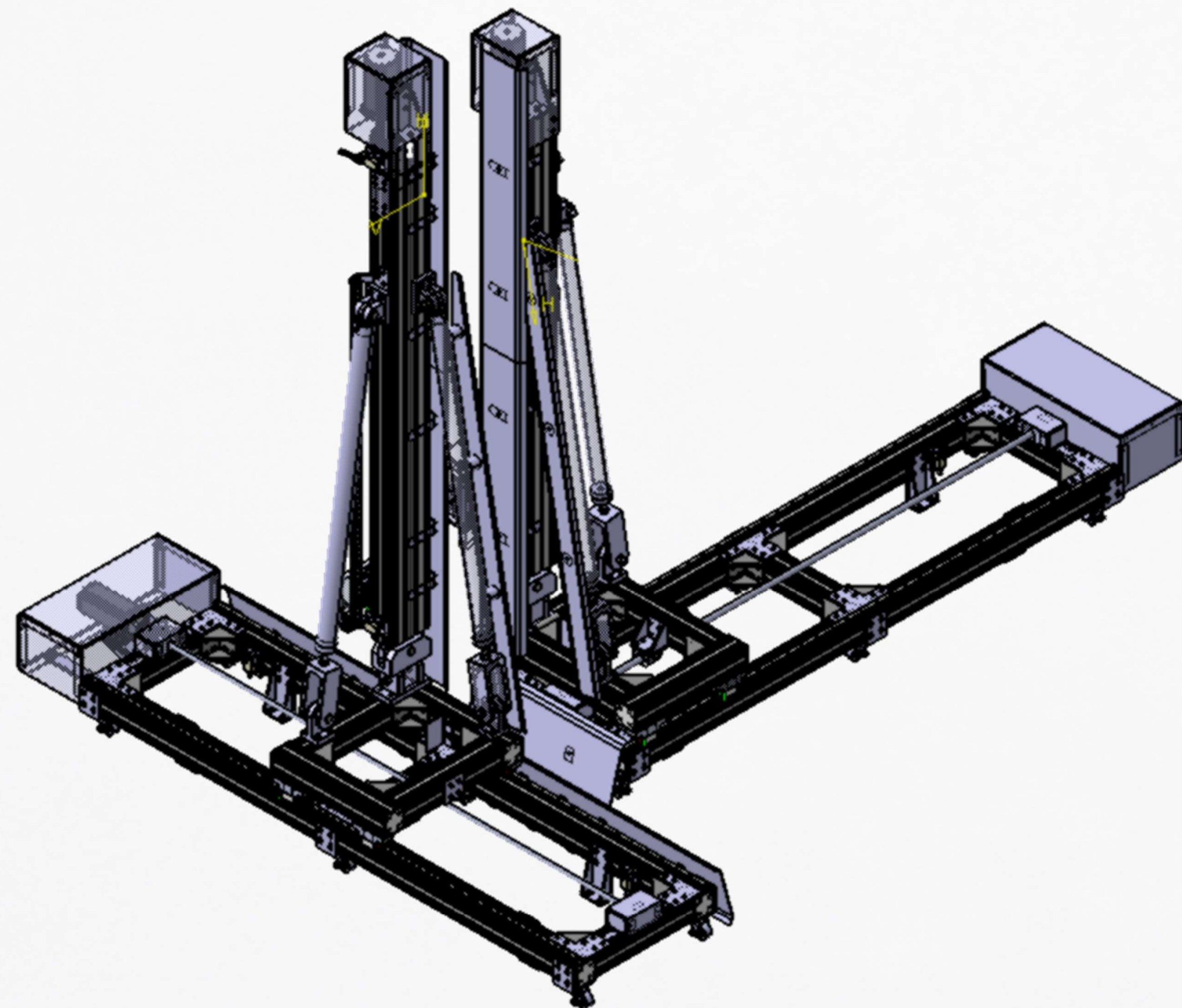
Tasks

➤ Mechanical Design-Drafting

Planar Measurement Device for Antenna

Description

In the era of modern electronic warfare, radar and communications antenna performance is key to battlefield superiority. In 2025, the Air Force Academy Laboratory, supported by DTI, developed the Planar Measurement Simulator Machine for Antennas, a technological breakthrough developed by the nation's best minds to support research and testing of key weapons systems. This simulator is designed to accurately map antenna radiation characteristics using planar measurement methods. This system enables Air Force Research and Development personnel and defense researchers to analyze antenna radiation patterns, gain, and polarization to international laboratory standards.



Technical Advantages

High-Precision Motion System

Extremely smooth and precise sensor movement along a linear axis ensures accurate planar data acquisition without significant error.

Modular Design

The simulator's flexible structure can accommodate various types of radar antennas.

Real-Time Data Visualization

Equipped with integrated software capable of instantaneous far-field and near-field mapping.

Tasks

- Mechanical Design-Drafting

Instocker & Outstocker Machine

Description

Amidst the rapid development of the electronics manufacturing industry, space efficiency and speed of product flow are key to competitiveness. In 2019, PT Winteq and DTI created a cutting-edge solution with the Instocker & Outstocker Machine—an automated storage system specifically designed to handle electronic components with a high level of precision and security. This machine is not simply a storage rack, but rather a self-contained logistics ecosystem that automatically integrates input and output processes. Designed to protect sensitive electronic components, this system minimizes manual intervention and the risk of human error.

Technical Advantages

Automated Input System (Instocker)

Intelligent sensors automatically identify components as they enter the system, classify them, and place them in optimal storage coordinates.

Precision Retrieval (Outstocker)

A fast and accurate picking mechanism based on system commands, ensuring the First-In, First-Out (FIFO) principle is maintained.

Smart Inventory Management

Integrated software that tracks stock positions and quantities in real time, providing accurate data for production planning.

Tasks

- Mechanical Design-Drafting



Instocker



Outstocker

Train Seat Testing Equipment

Description

Passenger safety and comfort are top priorities in the railway industry. To achieve world-class quality standards, PT INKA (Persero) partnered with engineering experts from the Faculty of Mechanical and Aerospace Engineering (FTMD), Bandung Institute of Technology (ITB), and DTI in 2019. This collaboration established an independent testing infrastructure aimed at validating the durability of domestically produced train seat interior components. The project included the development of a series of mechanical test equipment specifically designed to test three key components of train seats: the headrest, armrest, and seat cushion.

Technical Advantages

Headrest Durability Test

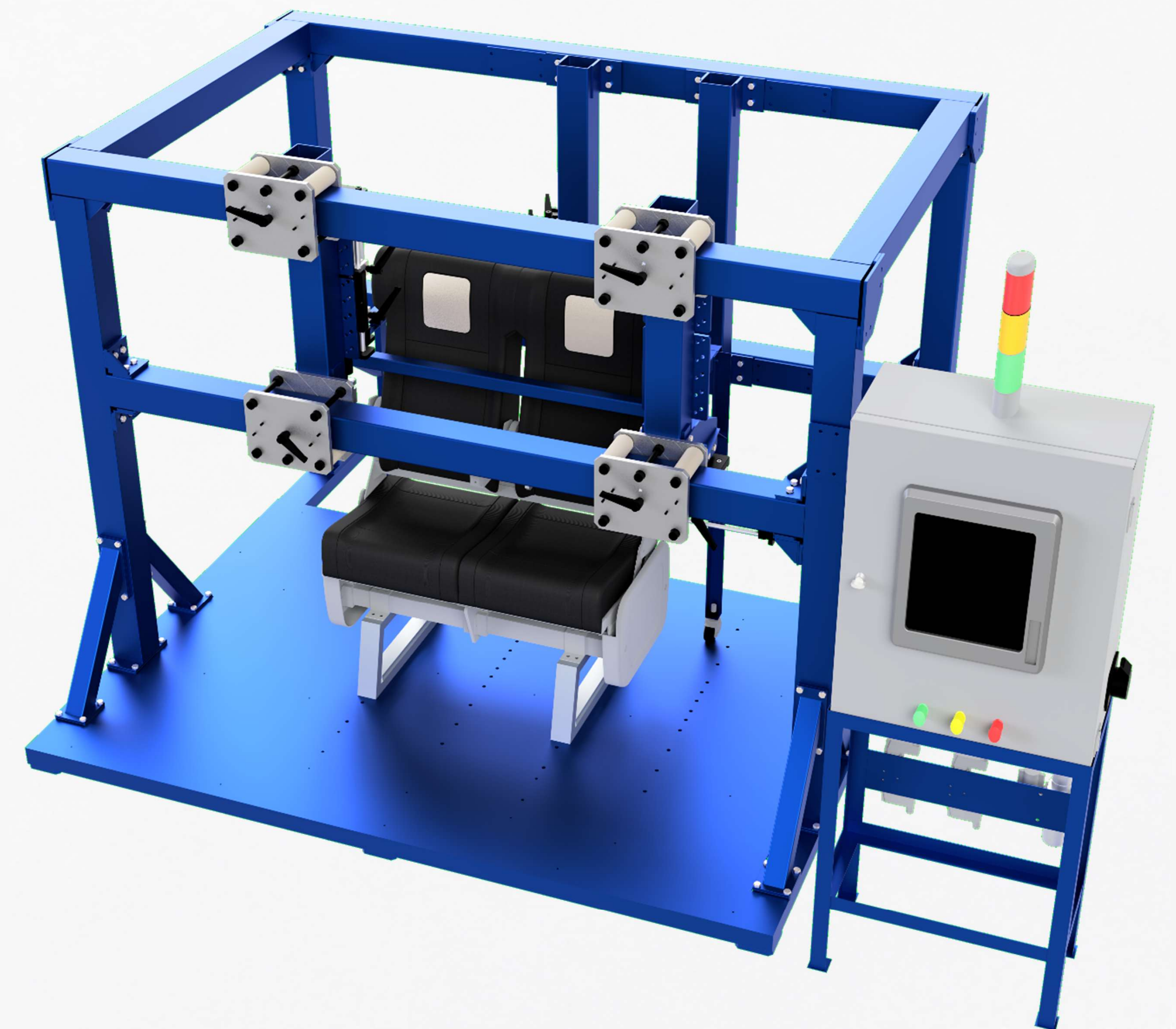
Dynamic and static load simulations to ensure the headrest can withstand impacts and seatback loads without structural failure.

Armrest Cycle Test

Tests the functionality of the armrest through thousands of loading cycles, simulating intensive passenger use over many years in a short period of time.

Seat Cushion Compression Test

Evaluates the elasticity and resilience of the foam and cushion cover to continuous sitting loads, to ensure ergonomics are maintained and permanent deflection is avoided.



Tasks

- Design-Drafting
- Assembly
- Manufacturing

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Contact Us



THANKS:

DO YOU HAVE ANY QUESTIONS?



 Rivaldi M A

 rivaldi@dt-id.com

Address
Sekejati Street 40, Sukapura
Bandung, West Java
Indonesia

 www.dt-id.com

@pt_dti 

@desaindanteknikindonesia 

desain teknik indonesia 

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