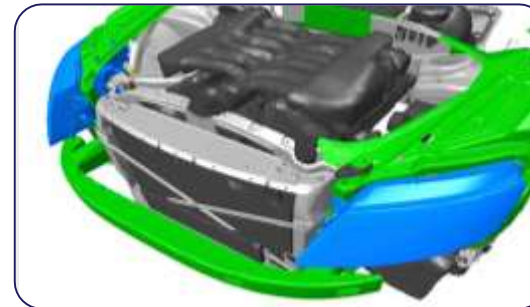




SEGULA SLOVAKIA COMPETENCY CATALOG





OPERATION SUPPORT

AGV DELIVERY FULL IMPLEMENTATION :

- Tool to automatize the delivery of parts to the line-side
- Major lean principle applied :
 - Manual delivery is a MUDA that needs to be deleted for efficiency
- Savings :
 - Nominal efficiency:
 - Headcounts for each loop



Why us?

Implementation of the AGV loop but also everything around (flow simulation, logistics studies, dollys fabrication, training, ...)

KITTING FULL IMPLEMENTATION

- Tool to allow assembly operator being fully concentrated on making right at the first time
- Major lean principles applied :
 - Assembly workstation is at the best quality / efficiency level
 - MUDA (waste/scrap) are pushed / tread upstream from assembly workstation
- Savings :
 - Flexibility :
 - Technical headcount to study & implement major/minor line-balancing
 - Investment for line-side
 - Compacity of the assembly process
 - Nominal efficiency:
 - With the previous item, gap is 5 to 10% headcount performance for the all assembly system
 - Quality :
 - The assembly operator focuses on the added value activity
 - Workstation environment, Safety, 5S and Management



Why us?

Implementation from A to Z (flow simulation, logistics studies, AGV loop installation, kits creation, dollys fabrication, kitting zones modelling, pick to light integration, transfer to the line, training...)

Supplier Management.

Supplier management

- Supplier & customer needs analysis
- Managing the change process and product.
- Creating a price budget for process & product changes
- Project & serial audits
- Approval of samples, tools and process
- Design and approval of control products
- Creation and management of project & serial complaints



Why us?

Expertise team to support in Supplier Management with experiences from local supplier and global OEM.



Management Reporting

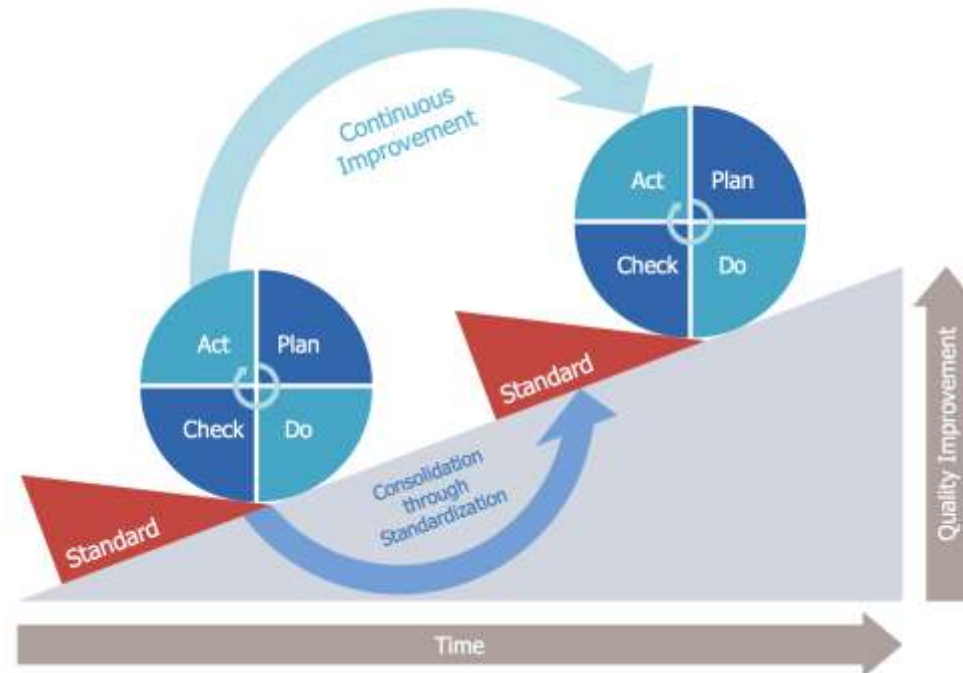
- Regular reports on the status of the project & series
- Supervision of project & serial budget

Lean Manufacturing Expertise

PROBLEM SOLVING COACHING : PSA Trnava

- Methodology to define, determine the cause of a problem and identify, implement solutions
- Major lean principle applied :
 - Find the real cause to implement durable solutions

- Savings :
 - Safety
 - Management
 - Quality
 - Cost
 - Delay



Why us?

Long expertise in manufacturing and quality for automotive

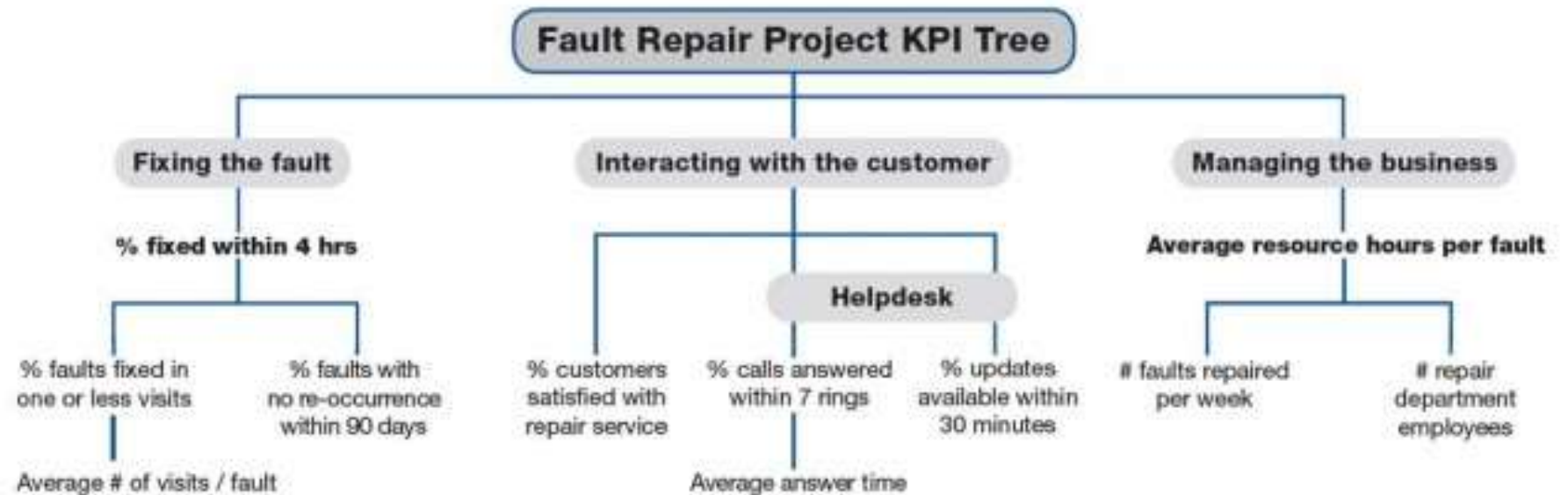
Lean Manufacturing Expertise

KEY PERFORMANCE INDICATORS TREE CREATION : PSA Trnava

- Methodology to define aims at each level of the company
- Major lean principle applied :
 - Objective all the hierarchy contributes to high efficiency
- Savings :
 - Safety
 - Management
 - Quality
 - Cost
 - Delay

Why us?

Long expertise in manufacturing and quality for automotive





PROCESS DESIGN

PROCESS ENGINEERING & CAD SIMULATION :

- Multiple types of processes : casting and molding, machining, joining, and shearing and forming
- Tools / handlers / jigs & fixtures plant integration
 - From study phase to implementation.
 - Fixture analysis and geometrical analysis of the product .
- Major lean principles applied :
 - Assembly workstation is at the best quality / efficiency level.
- Savings :
 - Flexibility :
 - Technical headcount to study & implement major/minor line-balancing
 - Investment for line-side
 - Compacity of the assembly process
 - Quality :
 - The assembly operator focuses on the added value activity
 - Workstation environment, Safety, 5S and Management

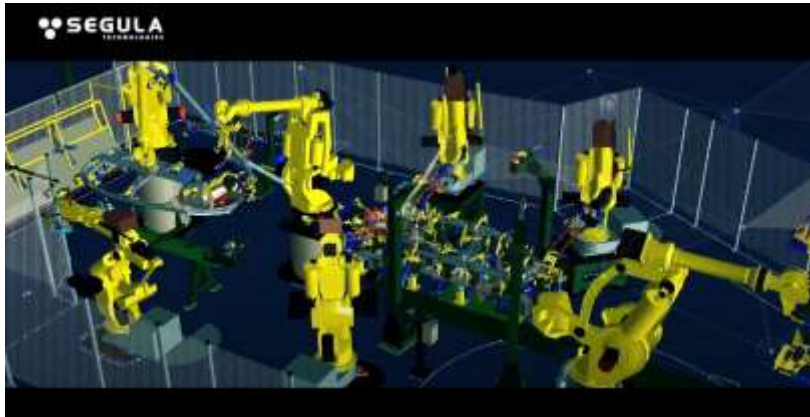


Why us?

Complex design of manufacturing process from A to Z (supplier management, planning engineering, tools, handlers, jigs & fixture plant integration, training...)

SCALING AND MANUFACTURING OF ASSEMBLY LINES :

- Scale-up of an innovation from prototype to production
- Study & Integration of new Assembly lines.
- Development of new product with high quality.



Why us?

We serve Automotive, Rail and Medical sectors, with expertise in Seating, Interiors, GearBoxes, CAE & CAD, Product Development, Mechanisms and Bio-Medical Engineering Solutions.

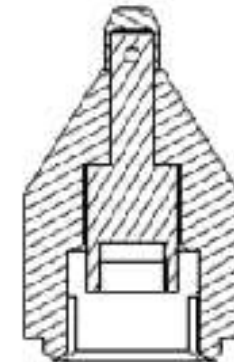
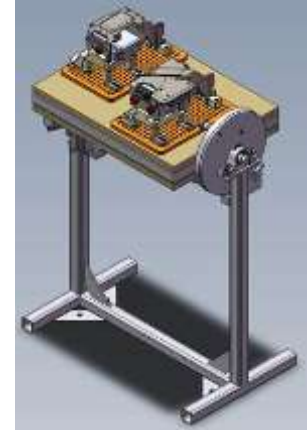
INTEGRATION OF TOOLS

- Full packages of service for customer
- Specification of tools by needs of customer
- Focusing on :
 - EC tools
 - Air tools
 - Handlers
 - Preparation tables
 - Jigs & Fixtures



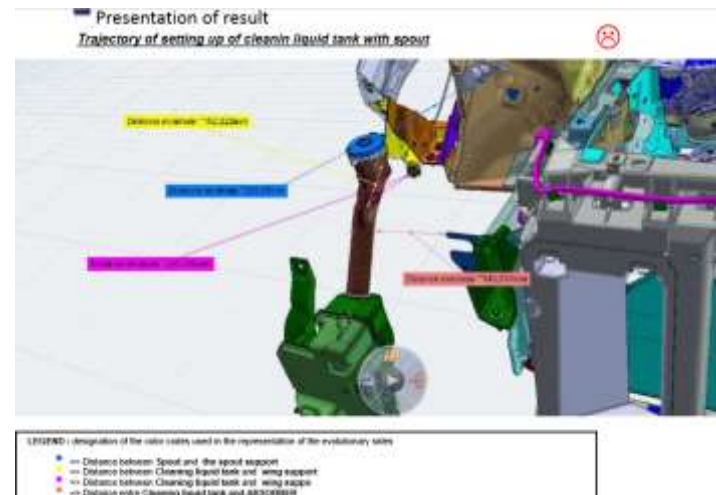
Why us?

Complex integration of tools from A to Z (requirements, supplier management, planning, design, tools specification, focus of ergonomics & safety, training...)



CAD Feasibility of the tools and assembly and quality analysis :

- CAD Tools and PLM data expertise
- Digital mock (DMU) , PMU , Product analysis
- Manipulation of assembly as per requirements
- Manikin study & ergonomic study
- Quality Result – Easy understanding and explanatory images with color coding .



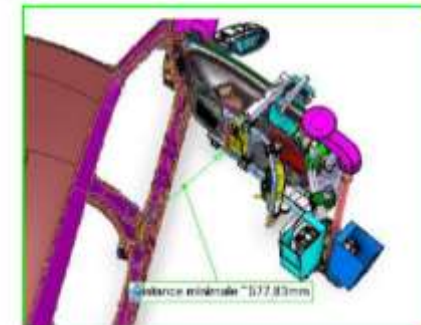
Why us?

Complex model feasibility with all details (requirements, design and CAD tools specification, focus of ergonomic study, OEM standards exp)



The minimum distance between the manipulator reassembly door and the body is 126,209 mm

Top view



The distance of the passage of the operator between the manipulator reassembly door and the center feet of the body is 577.83 mm



PRODUCT DEVELOPMENT

Part & Assembly Design

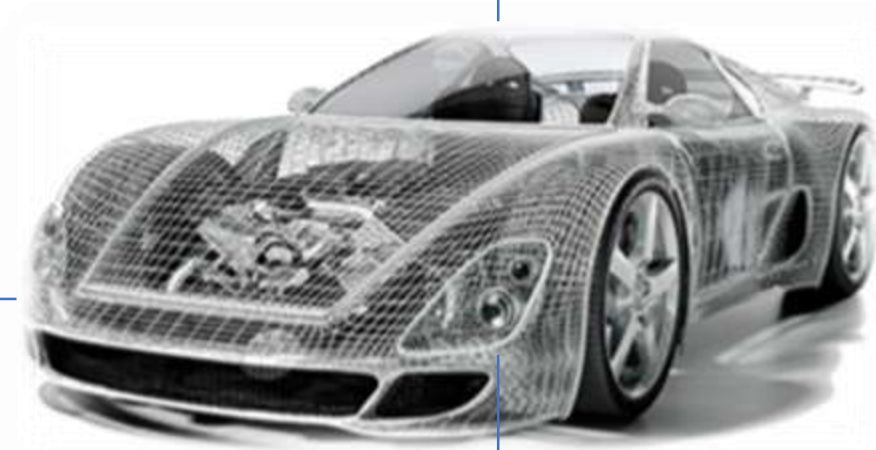


■ EXTERIORS

- | BIW | Bumper system || Spoiler
- | Fender | Bonnet | Tail gates
- | Roof Systems

■ INTERIORS

- | Instrument Panel | Consol
- | Door Trims | Seating System
- | Pillar Trims | HVAC Ducts



■ VEHICLE ARCHITECTURE

- | Vehicle Packaging | Occupant Packaging
- | Vehicle DMU | Clash Analysis
- | BOM || Benchmarking | Weight Management

■ ELECTRICALS

- | Lighting System
- | Wiring Harness

Part & Assembly Design :



Project executed in SEGULA Group



Software Tools:

Design : Alias Surface, Maya, ICEMsurf

Engineering : Catia V5/V6, ProE, Siemens NX, Autodesk, Ansys.



INNOVATION

Augmented & Virtual Reality

Virtual Reality Solutions :

- By VR meets a requirement of customer to provide operator step-by-step for wayfinding
 - Optimizes the transfer of know-how from expert to field operators
 - Reduces time which cuts costs

- Realisations:
 - Help maintenance operators on their daily rounds
 - Guiding an operator and checking conformity
 - Make operations faster
 - More precise
 - Conformity control to achieve better traceability of parts by generating a report to facilitate control

- Savings:
 - High precision
 - Get everything right the first time round
 - Works without marker
 - Time savings



Car-to-car communication using Li-Fi :



The development of driver assistance systems is a major challenge for car manufacturers, who must meet increasing safety objectives (accident reduction).



The objective of this project is to design a system for real-time transmission of vehicle to vehicle data in order to avoid possible collisions.



SEGULA has designed a system that uses Li-Fi technology to transmit data between vehicles via the front and rear lights that are already on the vehicle. This system can be used to maintain suitable distances between two vehicles, and in the future, it can be used to create convoys of partially autonomous vehicles by transferring data between the lead vehicle and those following behind.



Cost-effective technology, safety.

Advanced car technologies :

■ Biometric Vehicle Access

- The switch we've seen in recent years from keys to keyless entry and start will be followed by a switch to key-fob-less entry and start. You'll be able to unlock and start your car without anything more than your fingerprint (or maybe your eyeball, but fingerprint readers are more likely than retina scanners). Sound a lot like the latest form of cell phone security? It should, because it's exactly the same concept.

■ Active Window Displays

- Head-Up Display (HUD) technology has come a long way from the dim, washed out green digits some cars projected on their windshields 20 years ago. But as good as HUD is in 2015, by 2020 we'll see active glass capable of displaying vibrant images. Imagine a navigation system that actually highlights the next turn (as seen from your perspective, through the windshield) as you approach it.

■ Remote Vehicle Shutdown :

- This technology already exists, with OnStar leveraging it regularly. In recent years the telematics company has shut down hundreds of stolen cars, ending police chases quickly and with little drama (though most drivers still don't know it can be done, even drivers with OnStar...). By 2020 remote vehicle shutdown will enter the social consciousness, negatively impacting nightly news ratings everywhere.

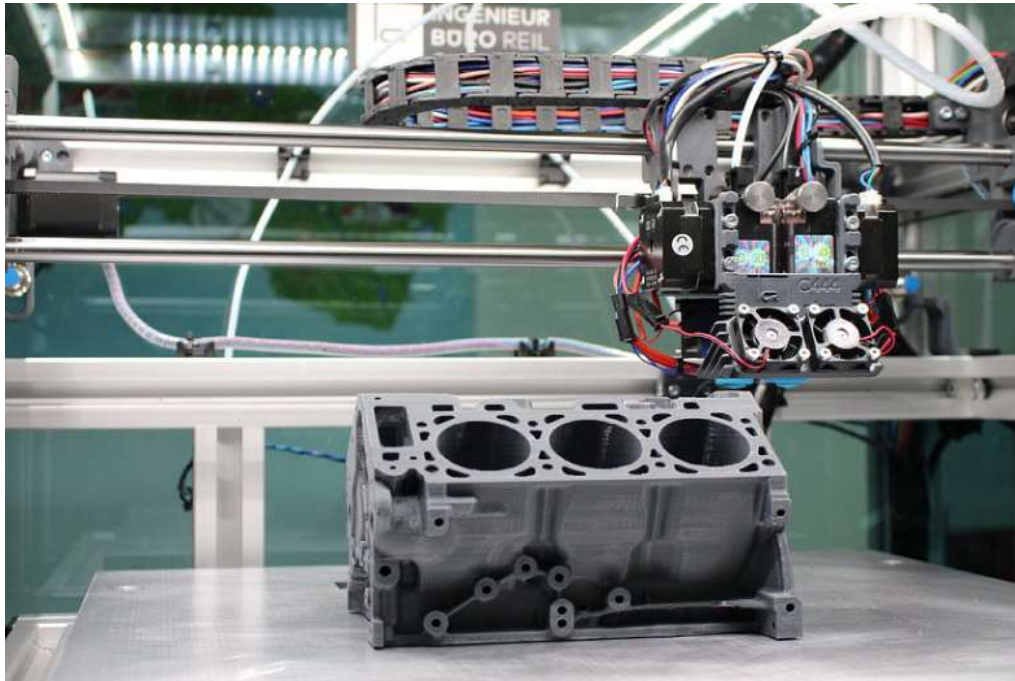
■ REPAIR of battery-pack

- Solutions: simple Lift technologies for battery change

3D Printing & Rapid Prototyping

Virtual Reality Solutions :

- Benefits of 3D Printing:
 - Lighter components
 - Modern & cheap way of production for a wide range of options
 - Wide range of uses of materials
 - Ability to select density of the component
 - Reduces time which cuts costs



Rapid Prototyping:

- Realisations for Rapid Prototyping:
 - Eliminates complicated machining (cutting, milling, drilling) from work procedures
 - Quick response to the client
 - For Production -> Quick solutions & lighter parts
 - For maintenance -> replacement for unavailable components
- Savings:
 - Time savings
 - Cheap refill
 - Weight reduction
 - Ecological => Recyclation



THANK YOU

www.segulatechnologies.com

