



SaarGummi
Automotive

COLLABORATIVE ROBOTICS
OBSERVATORIO DE LA INDUSTRIA 4.0
SAARGUMMI IBÉRICA, S.A.

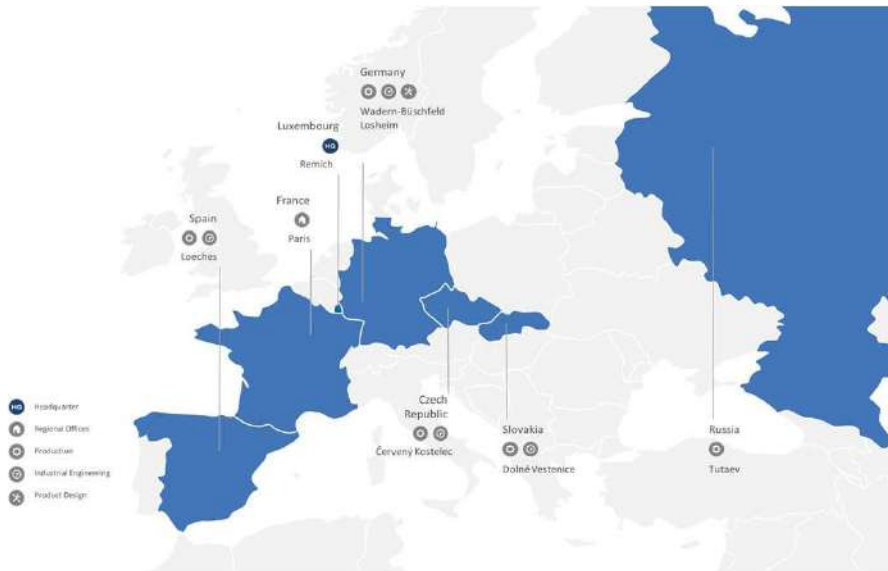
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24/02/2022



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Supplier for Automotive Industry. Car body sealing systems for main OEMs located in Southern Europe.

- Very strong lean manufacturing approach for every production process.
- CoC lean transfer splicing. Automated assembly lines to reduce intense labour cost of splicing process.
- Process innovation leaders for International SaarGummi Group.
- State of the Art special machinery.
- In the 2nd European car maker country, neighbour to the 3rd and 4th.

Facts & Contact.

Founded 1992.
Employees 300 – 500.

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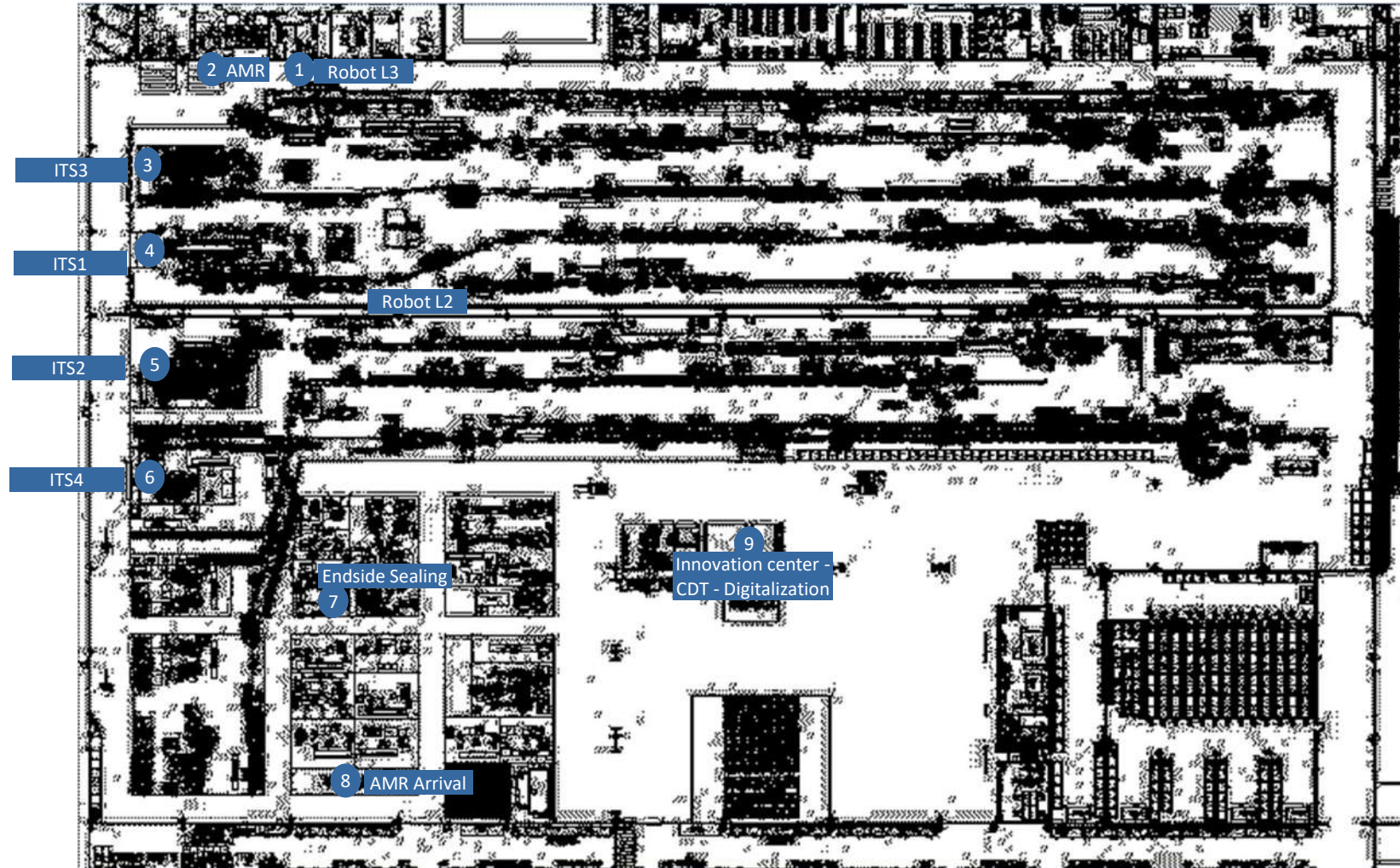


SITE VISIT ESLO 24th FEB., 2022

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Plant Tour:

1. Robot L3
2. AMRs
3. ITS3
4. ITS1
5. ITS2
6. ITS4
7. Endside Sealing
8. AMRs Arrival
9. Innovation Center
Technical Deployment
Digitization



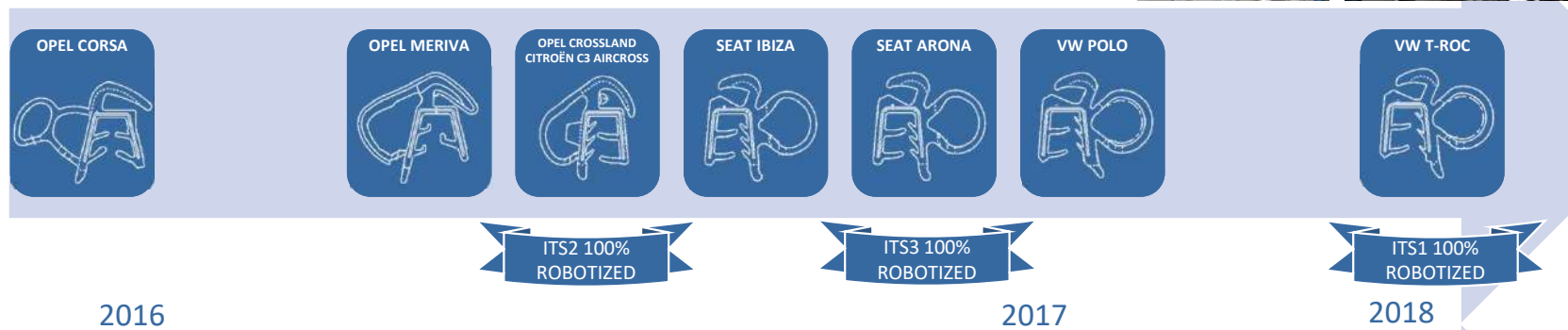


COLLABORATIVE ROBOTICS 2016 - 2019

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Loading Cobots. ITS2 & ITS3 & ITS1



Unloading & Handling & End side gluing Cobots



Types of robotization

DYNAMICS (some also applicable to Statics know-how)
Loading
Handling
Unloading
Measuring
Discriminating
End side
Trying now picking out of disordered random pieces
STATICS
All above dynamics learning +
Presses robotization

10 Cobot cases of use years 2016 - 2019

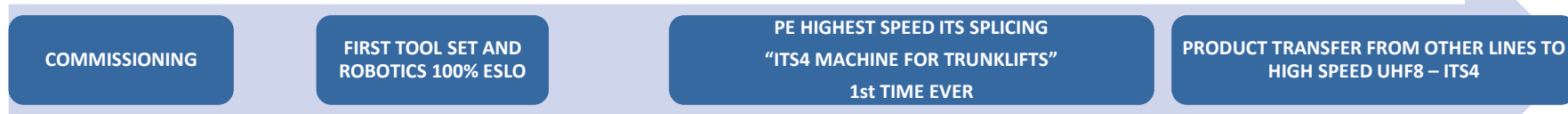


COLLABORATIVE ROBOTICS 2019 – 2021 + PROJECTS 2022

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Loading Cobots. ITS4

2020 2021



- Q1**
- One first set of tools ordered with the machine for commissioning.
 - Splicing PE process up to 30 m/min capacity for inner door seal.
- Q2**
- Additional inner door seal references robotized.
- Q3**
- Robotics next level. Very smart tool in the machine for extra handling of profiles feeding inside molds.
 - First time ever ESLO ITS splicing parts with mastic.
- Q4**
- Machine full capacity achievement.
 - New products: VW Taigo, more Atlas refs.



✓ 32 m/min
✓ 4-CAVITY
✓ SANDING BANDS

VW T-CROSS	VW POLO	AUDI A1	VW T-ROC
Jun-20	Sep-20	Oct-20	Dec-20

	Current UHF8 z-aut. Stand Alone 4 un.	ITS4	SAVINGS
Nr. of workers	5 people/shift	2 people/shift	261.-kEUR
Cutting discs	3.120 units	0	218.-kEUR
Var.O/H StandAloneSpl.	64.-kEUR	0	64.-kEUR

Unloading Cobots

2018 2019 2020 2022



- Q3**
- Unmanned end of line and rebalanced tasks for the other people in the extrusion line.
 - SCADA tracking NOK parts detected by the system, saved into MES and automatic KPIs reporting.
- Q4**
- Possibility of packing independently of each robot. In UHF2 robots can move independently, reducing cycle time to pick profiles up faster with higher line speeds.
 - NOK parts segregation system in the intermediate belt to avoid risk of packaging.
- Q1**
- Q2**
- Q1-Q2**
- Q3**
- Unload spliced parts automatically in the last stage of ITS process.
 - Worker full focus on Q added value tasks.
 - Improved safety and ergonomics.
 - One step closer to the full automated ITS splicing.

The machine is divided in the following stations:

- Profile closure system on eject tape.
- Ejection tray + hangers.
- Structures + robots + tool
- Programing + signals



It's not just unloading project but also:

- Online final length check.
- Ergonomics improvement.
- Length measuring
- Separation ok parts and no ok parts

SAVINGS K€/year/Machine	PAYBACK Years
90 (3 operators/year)	1,2



SG Automotive 2021



VI PREMIO IMPULSO DE LA INDUSTRIA CONECTADA

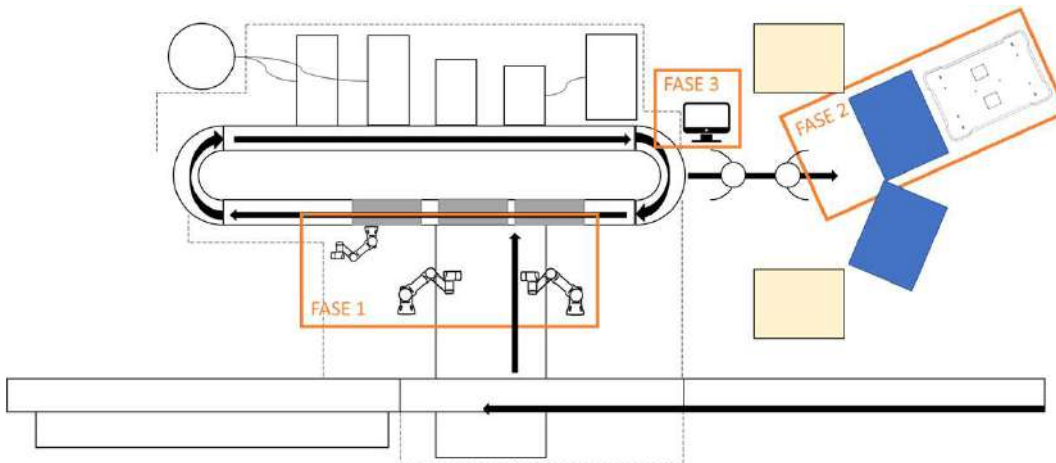
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FASES IMPLEMENTADAS

FASE 1. ROBOTIZACIÓN DE LA MANIPULACIÓN DE JUNTAS DE CAUCHO EN LA ZONA DE ALIMENTACIÓN Y CARGA DE UNA MÁQUINA TRANSFER DE PEGADO.

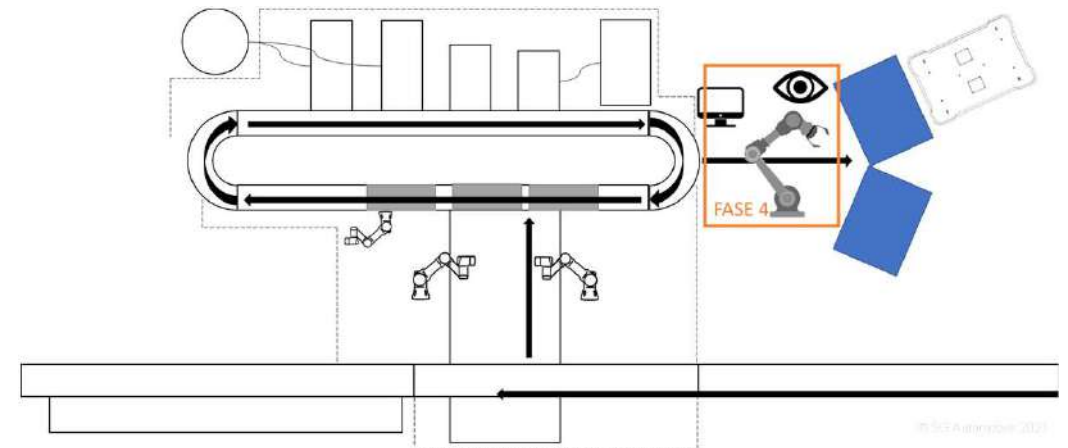
FASE 2. LOGÍSTICA AUTÓNOMA PARA EL MOVIMIENTO DE LOS CONTENEDORES DE PRODUCTOS FINALES.

FASE 3. CONECTIVIDAD DE LOS DIFERENTES EQUIPOS Y DIGITALIZACIÓN DE PROCESOS.



FASES EN IMPLEMENTACIÓN

FASE 4. GESTIÓN INTEGRAL DEL PROCESO DE PEGADO CON ROBÓTICA Y VISIÓN ARTIFICIAL EN LA ZONA DE DESCARGA DE LA MÁQUINA TRANSFER.





IMPACTO EN LA COMPAÑÍA



2 AMRs

Navegación logística autónoma

6 robots

14 cobots

Robótica



4 transfers

2 líneas extrusión

MES

Software propio



Máquinas de varias generaciones

SCADA

Sensorización y conectividad

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2022 - 2024

+6 robots

+5 cobots



7 OEMs

Diversidad de clientes

+100 modelos de juntas diferentes



Diversidad de productos

+10 técnicos

3 equipos complementarios



+50 usuarios de diferentes departamentos



Impacto y visibilidad en la plantilla

2016 - 2021





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