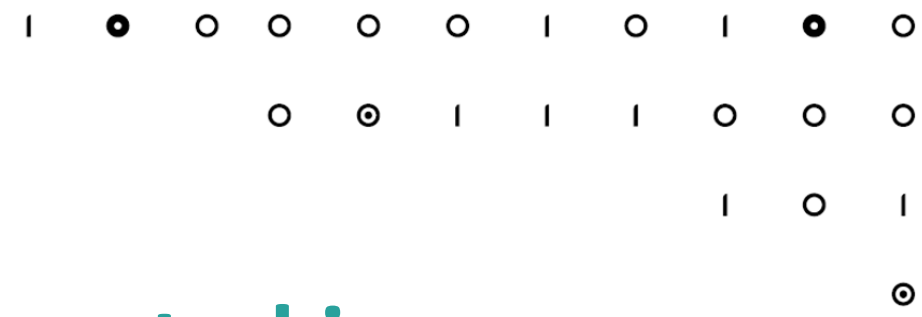


Prediction and Classification: Two AI Success Stories

Two Success Projects implemented in BSH Home Appliances Group

AI for Industry International Congress – Secpho – April, 2021

Javier.Orus@PredictLand.com / +34 659 73 55 29 / www.PredictLand.com



Two Success Stories Implemented in:

B/S/H/

BSH Electrodomésticos España, S.A.

BSH Home Appliances Group Esquíroz Plant – Navarra – Spain

Background & Challenges

Prediction of Machine Setup – BSH Home Appliances – Esquíroz – Navarra

Critical machine in the production line

Great setup difficulty when manufacturing circumstances change

Many manufacturing scrap and defects



Background & Challenges

Prediction of Machine Setup – BSH Home Appliances – Esquíroz – Navarra

Many machine downtimes

Big impact in efficiency and plant OEE



Solutions Implemented

Prediction of Machine Setup – BSH Home Appliances – Esquíroz – Navarra

☐ Prediction of machine setup for:

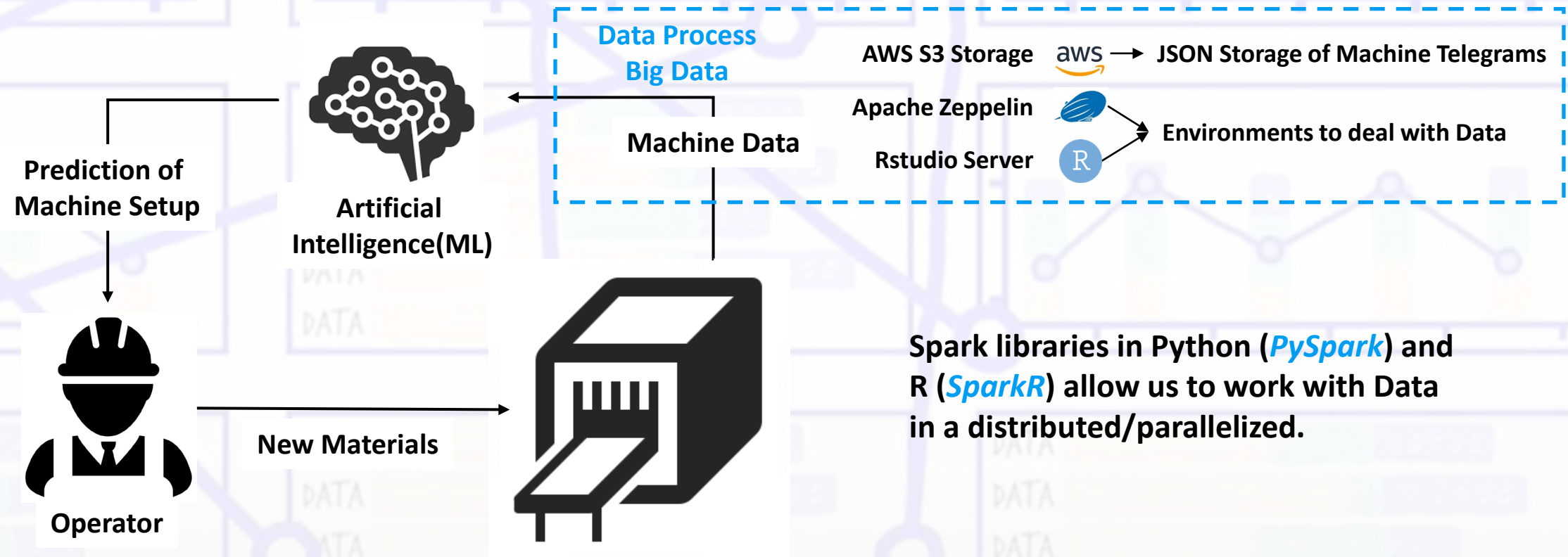
- ✓ Minimizing failures/defects and machine downtimes
- ✓ Improving efficiency & OEE

☐ This Prediction is made based on multiple Data Sources:

- ✓ Manufacturing Orders
- ✓ Materials
- ✓ Machine processes
- ✓ Machine pre-processes
- ✓ Maintenance

Solutions Implemented

Prediction of Machine Setup – BSH Home Appliances – Esquíroz – Navarra



Spark libraries in Python (*PySpark*) and R (*SparkR*) allow us to work with Data in a distributed/parallelized.

Results & Benefits

Prediction of Machine Setup – BSH Home Appliances – Esquíroz – Navarra

To increase OEE

Reduction of scrap and defects due to machine configuration errors

Results & Benefits

Prediction of Machine Setup – BSH Home Appliances – Esquíroz – Navarra

Greater Independence of the operator

To increase the efficiency in the production line

ARIS

AUTOMATIC RIS DOCUMENT CLASSIFICATION SYSTEM



Background & Challenges

ARIS Project – BSH Home Appliances – Esquíroz – Navarra

Need to optimize the quality analysis in the market

Classification and manual analysis of the technical repair services of the previous month according to failure modes



Background & Challenges

ARIS Project – BSH Home Appliances – Esquíroz – Navarra

Requirement of 10 days/month of work of an Engineer with high knowledge of the product and its manufacture.

Decision-making bottleneck



Solutions Implemented

ARIS Project – BSH Home Appliances – Esquíroz – Navarra

- ❑ **Intelligent automatic classification algorithms for repair technical services**
- ❑ **Integrated visualization of the results obtained together with other sources of relevant production data**

Tools

NLP, Deep Learning

Text Mining, Multi-Language

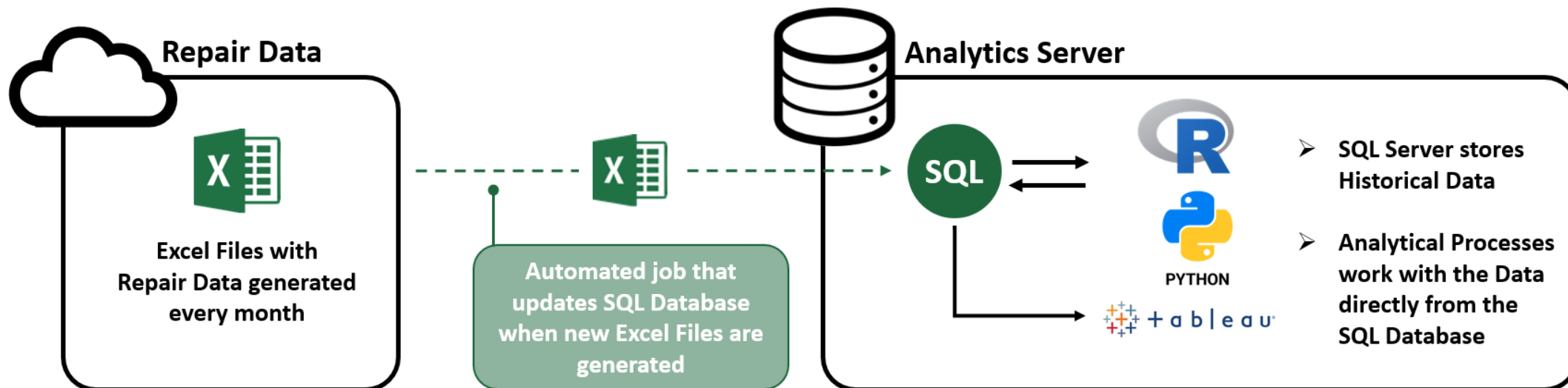
Python, R, AWS, Tableau

Data

Technical Repair Documents

Free Text in several languages

Knowledge of Quality Processes



Results & Benefits

ARIS Project – BSH Home Appliances – Esquíroz – Navarra

From 10 days/month to 6 minutes/month

Direct consumption of information by all stakeholders – Elimination of bottlenecks

Results & Benefits

ARIS Project – BSH Home Appliances – Esquíroz – Navarra

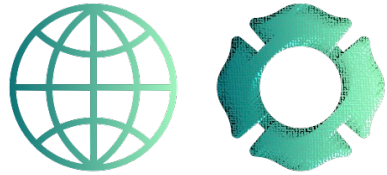
Analysis in multiple languages



Scalable solution to other BSH Group plants

International Awards

ARIS Project – BSH Home Appliances – Esquíroz – Navarra



**“BSH Innovation Award 2020 – Production Technology of the Year”
awarded by BSH Group**

“Excellence Prize 2020”, awarded by the German Chamber for Spain
