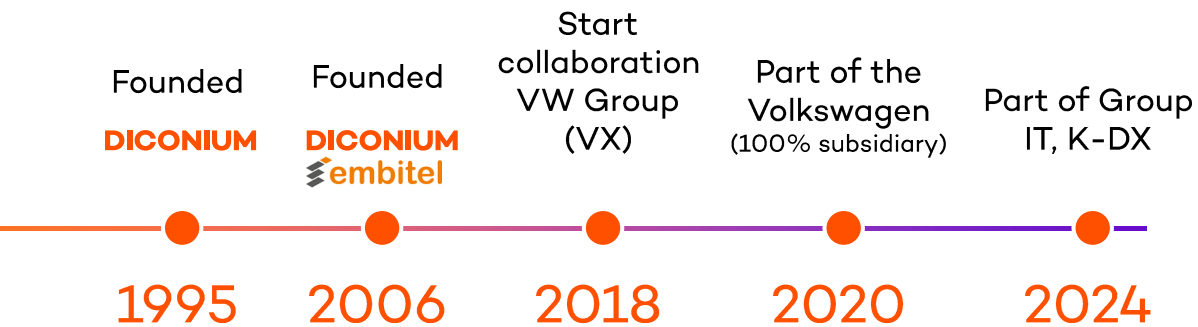


# Focus – Embitel India & Offshore

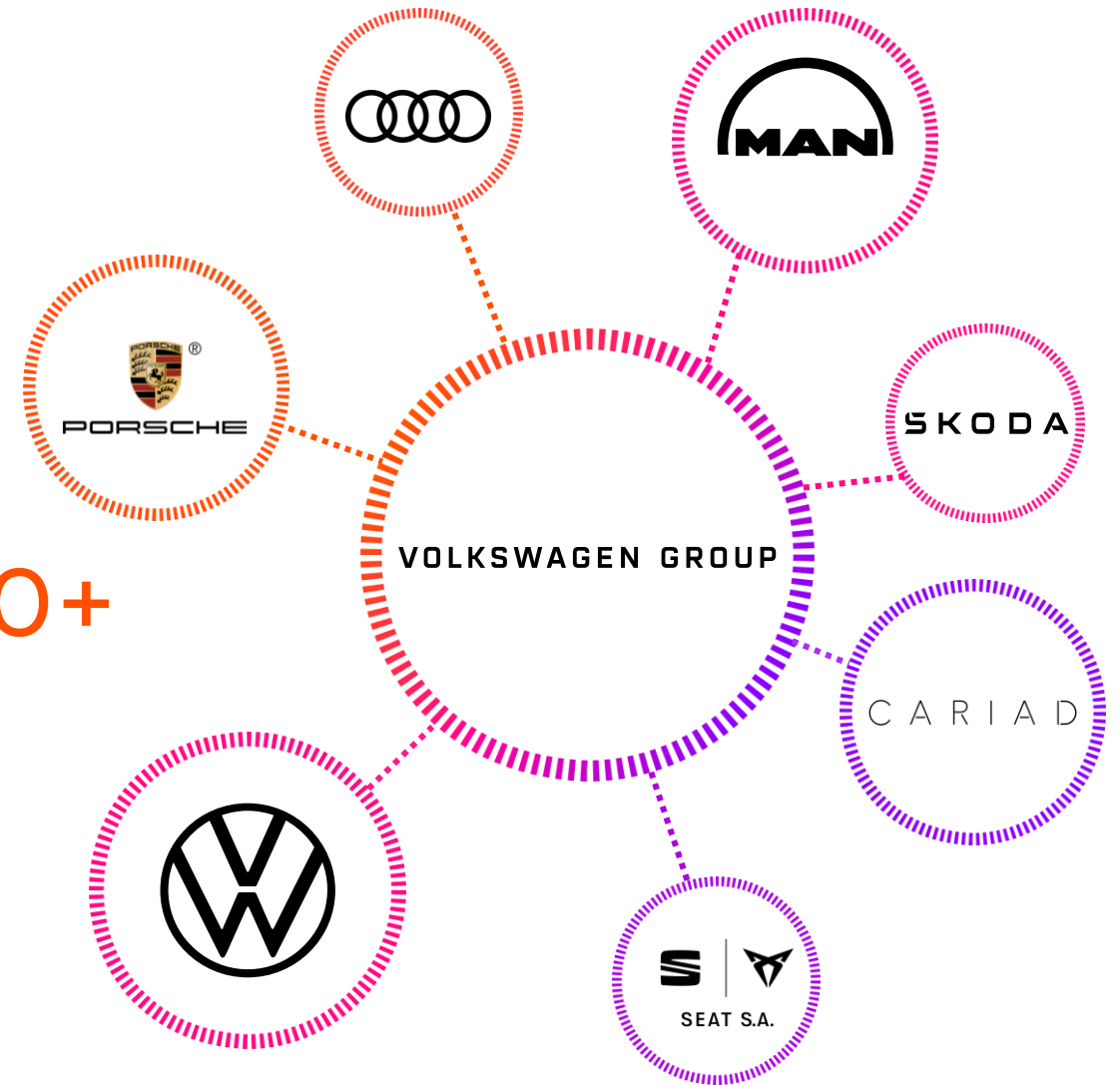
**An Introduction**

Mar 2025

# We are part of the family 100% VW-owned



500+  
projects



# diconium is a digital transformation partner with a global footprint

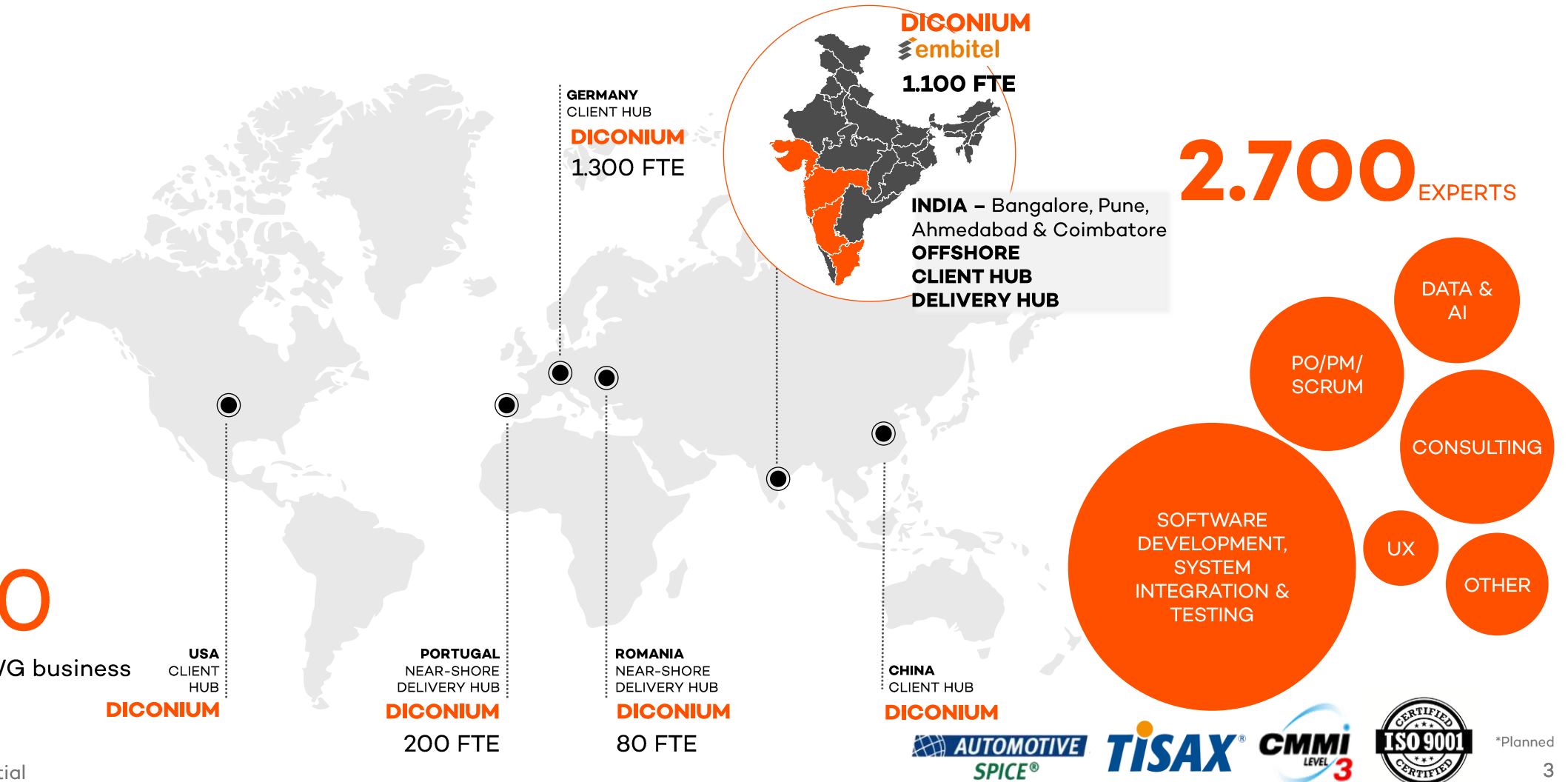
30

years  
of expertise

30/70

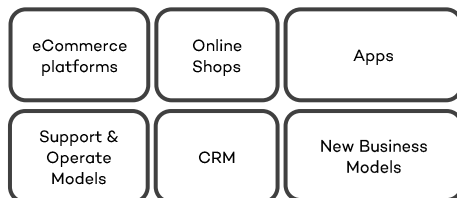
Beyond VW / VWG business  
Client split\*

diconium | confidential



# Digital Sales Solutions

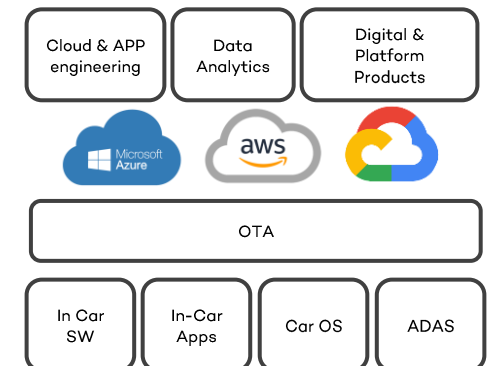
## Our Heritage



# Car Software

## Embedded / Cloud

## Our Expertise



**SOFTWARE ENGINEERING & TESTING**

**CYBER SECURITY**

**DATA & AI**

**DIGITAL ADVISORY**



# About Embitel

## Strong business roots & Automotive Focus



### The beginning

- 2006 start of the operations in India
- 2008 start of the operations in Germany
- 2014 start of the operations in the USA
- 2021 part of Volkswagen AG



### People power

- 1100+



### Business footprint

- Headquarters in Bangalore, Offices in Pune, Ahmedabad & Coimbatore in India
- Onsite presence in Germany, Nearshore in Portugal & Romania at diconium's office



### Success story

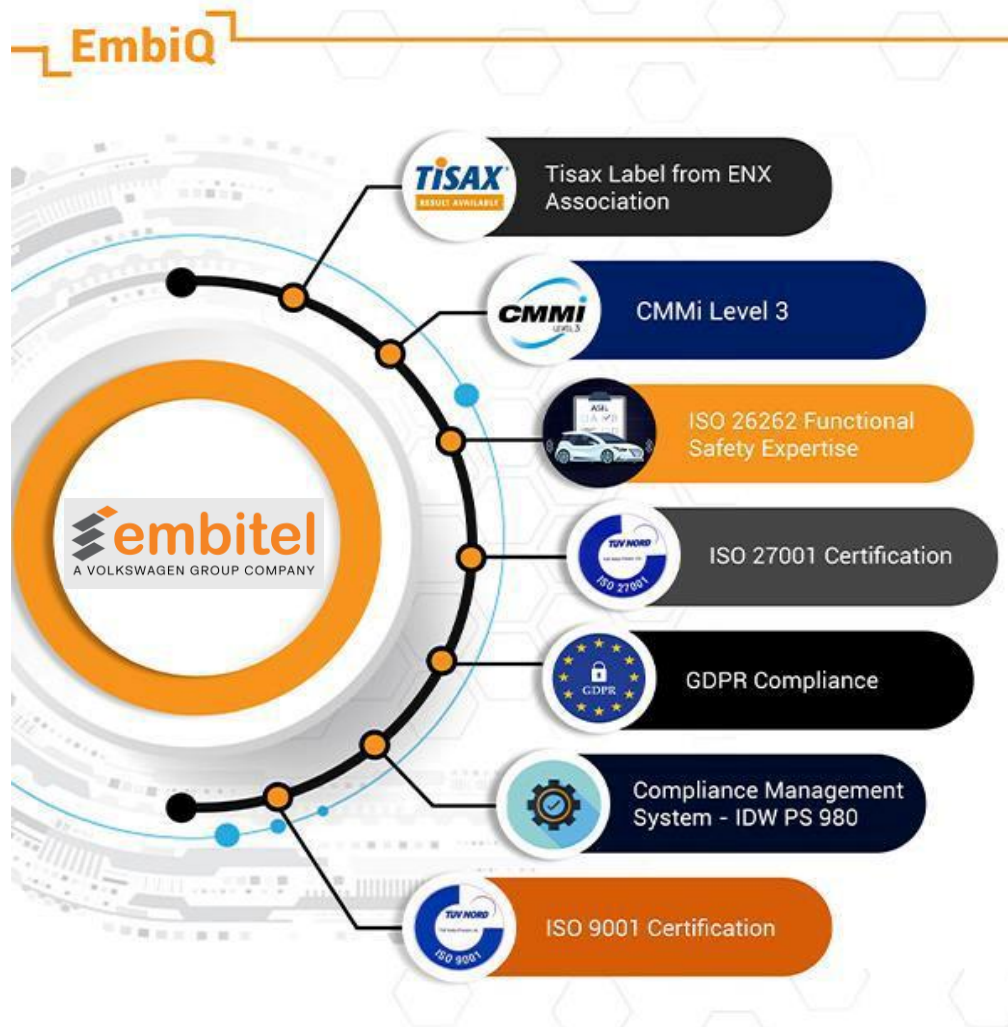
- Positive cash flow & profitable every year since inception
- part of Cariad / Volkswagen AG

## Our passion, recognized by the industry

- We are a TISAX, CMMI Level 3, ISO 9001:2013 and ISO 27001:2013 certified company!
- **ASPICE level 2 certified**



# Quality & Security Certifications



**AUTOMOTIVE**  
**SPICE® CL 2**



# The Embitel verticals

## AUTOMOTIVE ENGINEERING

### VW BRANDS

- Infotainment, Telematics, Connected Clusters
- PMT for SW engineering
- Functional safety & Cybersecurity
- AUTOSAR Services
- HIL & SIL
- Verification & Validation
- ADAS
- DATA Engineering and AI
- CX

### CARIAD INDIA

- E3 1.1, 1.2, 2.0 and others
- VW.OS, API Platform
- ADAS Application
- Scalable Vehicle Compute Platform
- Open-Source Lib Support
- Central Storage Service
- IoT Automotive Edge
- Platform Integration Team
- Mobile Device Key, VLK, Power Electronics

### PRODUCT ENGINEERING SERVICES

- Automotive engineering
- Connected Vehicle – Infotainment, Telematics, Connected Clusters
- Functional safety & Cybersecurity
- Networking and Diagnostics
- AUTOSAR Services
- Verification & Validation

## Digital Solutions

### DIGITAL SALES SOLUTIONS

- Consulting & Advisory
- Ecommerce, CMS, CRM, CDP, Cloud, Marketing Automation, Data & Analytics
- Web, Mobile & PWA Development
- Migration & Upgrades
- Managed Services
- Support & Maintenance

# Automotive Engineering Competence



## Automotive Engineering & IoT

- Infotainment & Android
- Connected Vehicle Solutions
- Rapid Prototyping and InCar Use Case Validation
- Virtual Validation, HiL and Vehicle Testing
- Functional Safety (ISO 26262)
- ALM/Codebeamer & ASPICE
- Embedded/ECU Development
- Library of Protocol Stacks
- End to End ECU development including hardware
- Vehicle Diagnostic & Communication Solutions
- Platform Software development



## Cloud, data & AI

- Cloud native full stack development for visualization tools
- AI based Video perception for ADAS
- Deep learning loop for data driven development
- Data as a service (Data Selection & Prep)
- AI for ALM
- Remote diagnostics & OTA
- Web & App Development
- UX/UI for Web, App & HMI
- Personalization & Analytics



## Cyber Security

- Penetration Testing
- Functional Testing
- ECU Product Security
- Security Architecture
- Security Engineering
- Applications & Services
- Security SW Components
- SW Integration & Adaption
- Threat Modelling & Laws
- End to End FuSA lifecycle consulting (ISO 26262)
- Safety Analysis activities (FMEA, FMEDA, DFA, FTA)



## VW Group Platforms

- E3 1.1, 1.2, 2.0 and others
- VW.OS, API Platform
- Open-Source Lib Support
- Central Storage Service
- IoT Automotive Edge
- Platform Integration Team
- AOS Gateway & ADAS
- Group Data Collector
- B2B Fleet Services

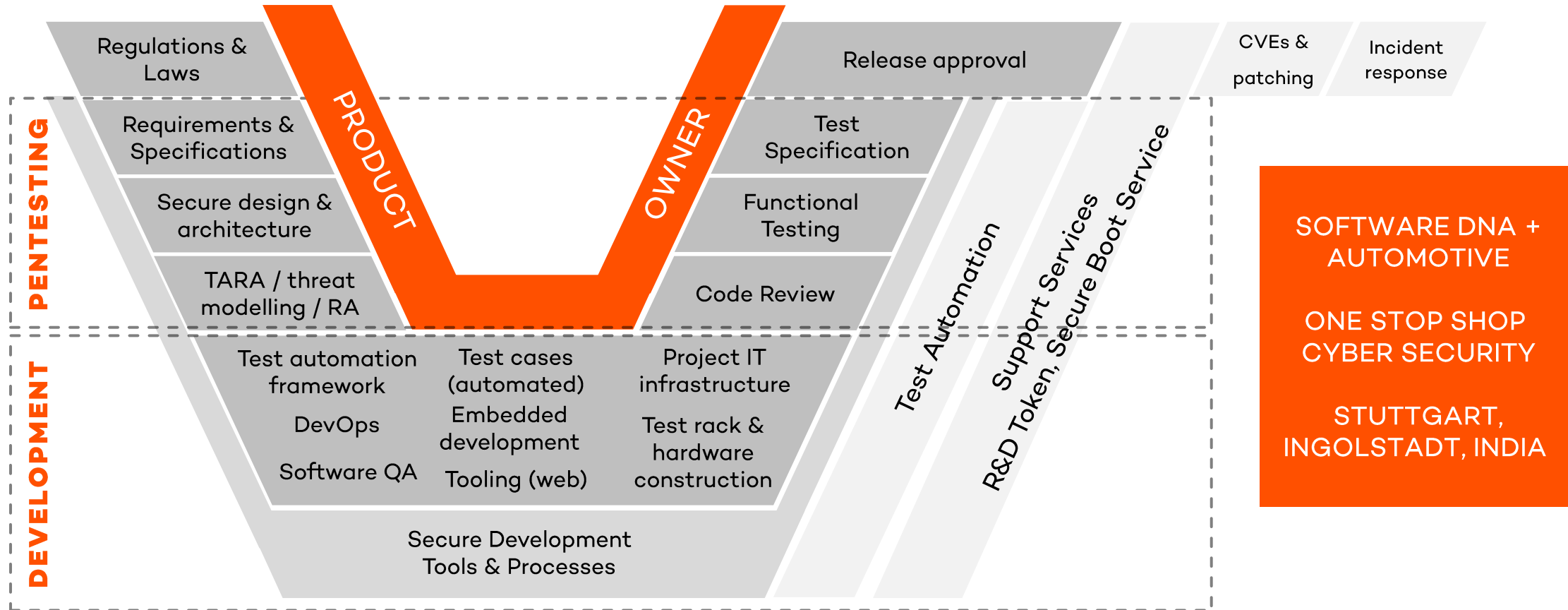


## Electric vehicle

- Traction Motor Control Unit
- Traction Inverters & Converters
- Battery Management System
- Vehicle Control Unit
- EV Charging Network Management
- Battery Swapping Station Solution



# Cyber Security for the entire Software Development Lifecycle



# ADAS : Deep learning Based Perception

## Building Capability in Strategic ADAS areas

### AI Based Video Perception features

- Covering data driven development cycle stages
- From data preparation and selection-model training-evaluation- failure analysis-data prep-cycle continues (not including deployment)
- Final delivery of the model and the metrics

#### Static Objects

- Traffic sign recognition
- Traffic Light recognition
- Beam detection

#### Dynamic Objects

- VRU
- Vehicle
- Light

#### Generic Objects

- Depth estimation of 3D motion
- Synthetic data generation

**Multi-task Backbone**



# Data Engineering for deep learning Loop for ADAS

## Data Selection

- Metadata and object search
- Specific search for long tail
- Pre label Data Curation
- 3D Visualization, Maps

## Labeling & Label Quality

- Label data pipeline, Supplier Management
- Auto Ground truth pipeline
- Quality check of labeled data

## Data Curation & Datasets

- Curation of training data
- DDE Scenario Detector

## Model Training and Validation

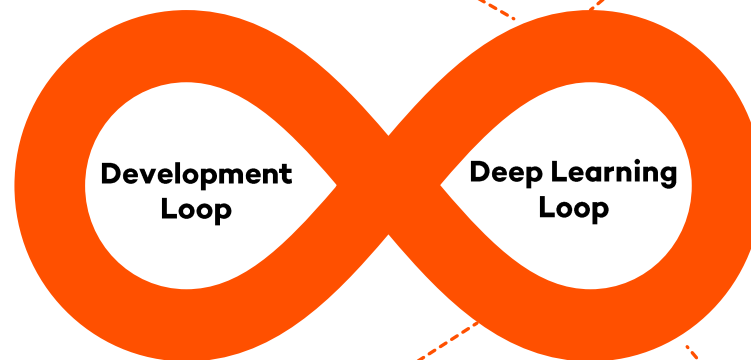
- MLOPs- pipelines
- Data Slicing, Model validation

## Data Collection and Management

- Retrofit Toolchain & Dashboards-
- Data collection using retrofit cameras
- Retrofit Device Management

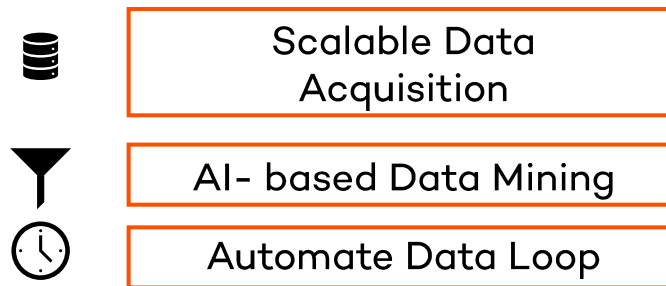
## Platforms

- Data platform:
- Managed platform for Data loop services
- Workflow as a Service



# Find your data: Search as a product and as a service

## Enablers that help cover the “long tail”



## Search:

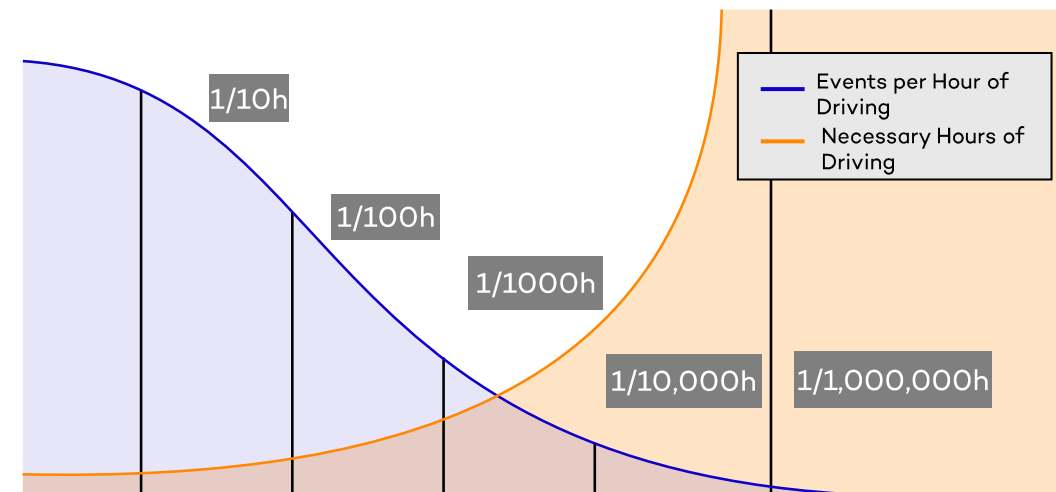
- Scaling: 200 million images, 2 billion vectors
- Multi modal search
- Multi foundation model capability
- Re-ranking or few shot learning
- Performance monitoring and cost reporting from production : fully automated and transparent calculation for RoI

## Object Retrieval for

- 18 Object types/ Features (ex. Traffic Sign, Traffic Light, Vehicle, VRU,...)
- Object occurrence in a scene/context (Lighting, Weather,...)
- Object occurrence in a scenario ( Right turn, Left turn,...)

Right data is a fundamental & non-negotiable need for Video perception => search is an accountable service

## The Long Tail Challenge = Data distribution problem





# Digital Solutions

## SOLUTIONS

- Digital Commerce
- Content Management
- Product Information Management
- Customer Data Platform
- Marketing Automation
- AI / ML /Gen AI
- Web & Mobile Applications
- Custom Application Development

## PLATFORMS

- Adobe: AEM, Magento, Marketo, Analytics
- Commerce Tools
- Hybris Commerce
- Salesforce: Commerce & Marketing
- Android, iOS, Flutter
- Cloud (AWS, Azure)
- Progressive Web Apps

## SERVICES

- Ecommerce Strategy & Consulting
- Design & Development
- Microservices Implementation
- Dev-Ops, Tech-Ops & Marketing Ops
- Managed Services
- Cloud Native Development
- Testing & Test Automation

## DATA STUDIO

- Data science
- Data analytics
- Data engineering
- Data warehousing
- Data integration

# REFERENCE | Indian Commercial Vehicles Limited

## Integrated platform development

### Scope & Challenges

- Multiple mobile applications operating in isolation
- Data stored in silos, limiting integration
- Extended time to market for new features and updates
- Lack of visibility into customer and user behavior

### Our Support

- Unified customer and user journeys for various personas through a single mobile app, covering Sales, Service, Exchange platform, etc.
- Implementation of a customer data platform to consolidate data
- Development of tools like Product Price Calculator, Service Cost Calculator, and Product Configurator
- Seamless integration with existing ERP and other systems to streamline operations
- Enhanced customer experience through improved data flow and functionality

### Our Success

- Streamlined customer and user journeys, resulting in higher engagement and satisfaction
- Centralized customer data platform providing a 360-degree view of customers
- Faster time to market with new tools such as price and service calculators
- Improved operational efficiency through seamless integration with ERP and other systems
- Enhanced decision-making and personalization due to better insights into customer behavior
- Overall improved customer experience, leading to increased conversion, retention and loyalty

# REFERENCE | A Global FMCG Leader

## Commerce and CRM Solution

### Scope & Challenges

- Multi-country B2B portal to process web orders
- No dynamic pricing capabilities
- Search capabilities limitations due to indexing issues
- No Single sign available for employees and no WhatsApp sign on for distributors/End users
- No Analytical capabilities for measuring website performance

### Our Support

- Elastic suite, Microservices implemented to improve performance
- Implemented RDD based custom pricing & BOGO promotions
- Single sign in implemented along with login through WhatsApp
- GA 4 for in-depth tracking of customer events & use data to deliver insights



# Global Business Models with embitel

## CLASSIC SHORING



- Global software delivery and services for Stihl in Portugal and India with one global team approach
- Development of global VWG ONE.SHOP platform with global team in Portugal and India
- Broad scope from software development, testing, QA, service management and more

## BoT BUILT-OPERATE-TRANSFER



- Digital sales and commerce organization 'Cinteo' for Mercedes-Benz with > 100 FTE, transferred in 2020
- Software architect team for CARIAD with >72 FTE, transferred in 2021
- Embedded automotive team with >35 FTE for Forvia in India, transferred in 2020

## OPERATE CLIENT BUSINESS UNIT



- Embitel ramped up the CARIAD business unit with 511 FTE planned for 2024 in Bangalore, India
- Fully integrated CARIAD team with hand-picked talent and individual hardware to meet VWG standards
- Individual contractual set-up and day rate agreement with CARIAD



# What’s in for the Volkswagen Group

1

GLOBAL VWG PARTNER

Part of Volkswagen Group since 2020 with strong network and organization expertise

Serving VWG clients in all major client hubs ensures global scalability of teams and organizations

2

PRICING

Global cost-plus approach ensures transparent pricing and day rates

Agreed global VWG rates in place, Level 6 supplier status provides fast-track assignments for diconium and embitel

3

SPEED

Fast and cost efficient due to entrepreneurial freedom

Software DNA and global recruitment specialists enable us to ramp-up new teams and structures at top speed

4

FLEXIBILITY

Different business models possible such as shoring, BoT and operating business units

When focus and scope of projects change, we are ready to adaptt existing plans to maximize VWG’s global success



# THANK YOU