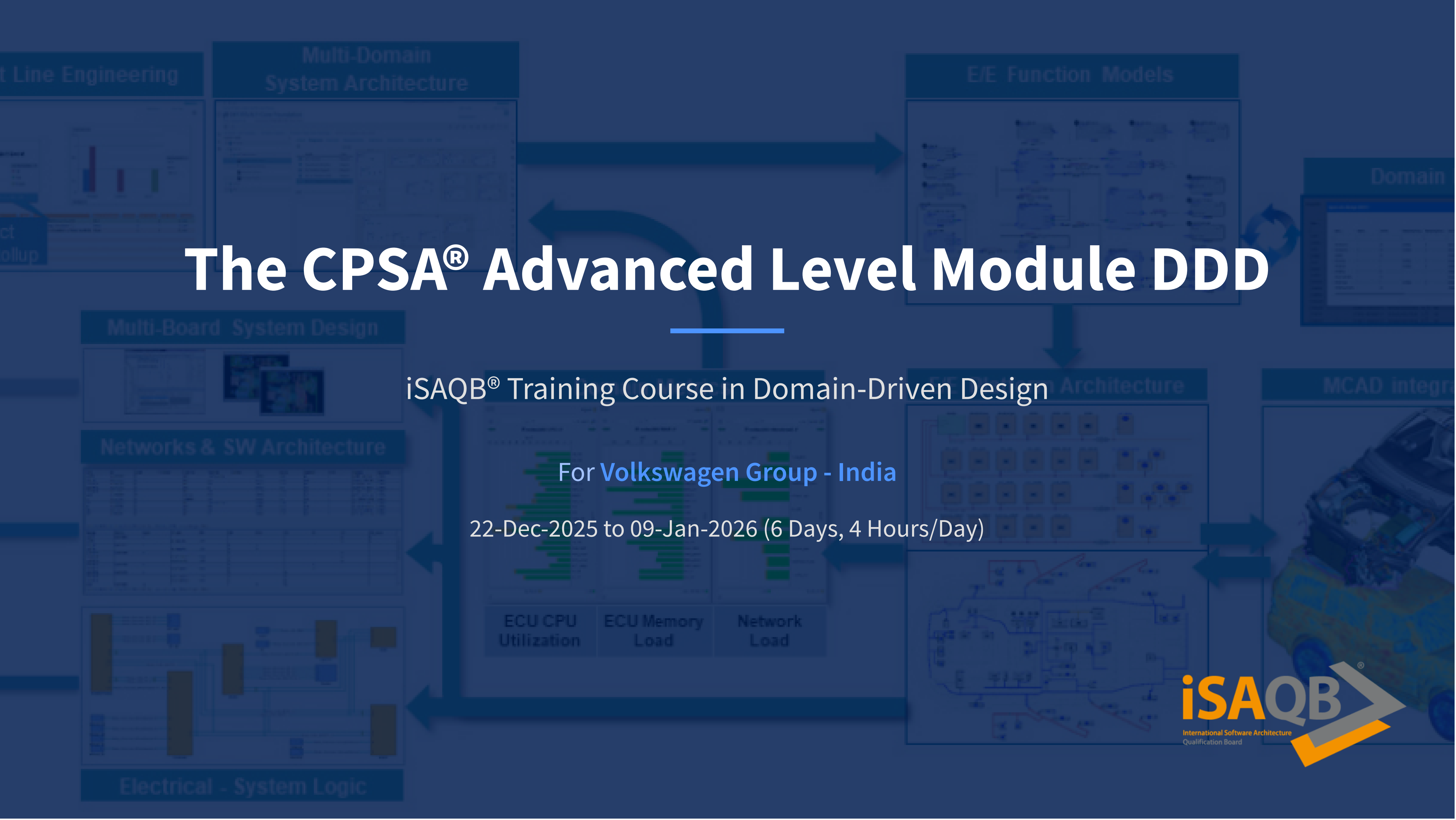


The CPSA® Advanced Level Module DDD

iSAQB® Training Course in Domain-Driven Design

For **Volkswagen Group - India**

22-Dec-2025 to 09-Jan-2026 (6 Days, 4 Hours/Day)

iSAQB®
International Software Architecture Qualification Board

Course Overview: Domain-Driven Design

What is DDD?

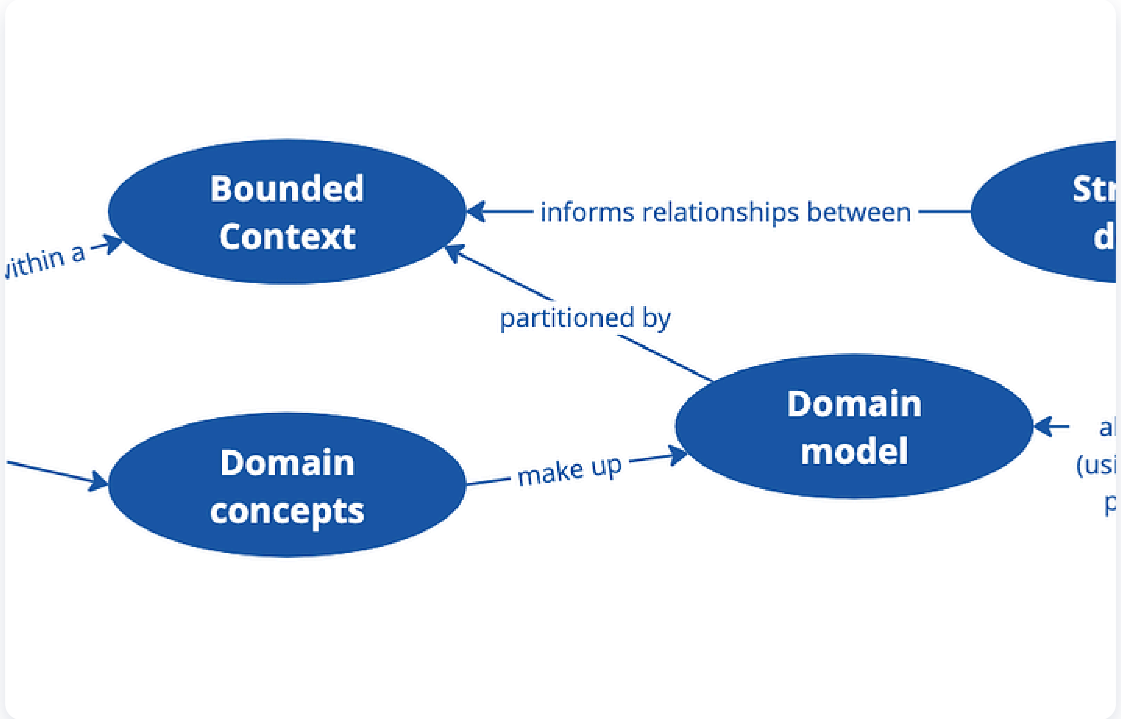
A strategic approach to software design that focuses on complex business domains and creates a shared understanding between technical teams and domain experts.

Why for Automotive?

Modern vehicles contain 100+ million lines of code across multiple domains (infotainment, safety, powertrain), requiring precise modeling of complex interactions.

Value for Architecture

Creates precise, transparent, and transformable representations of domains, enabling better communication, reduced complexity, and more maintainable systems.



iSAQB Certification Pathway

Foundation Level

Completed ✓

Provides fundamental knowledge of software architecture principles, methods, and techniques.

- Architecture Fundamentals
- Quality Attributes
- Design Patterns

Advanced Level

Current Focus

Specialized modules for in-depth knowledge in specific areas of software architecture.

- DDD (Current)
- Cloud Architecture
- Security
- Embedded Systems
- And more...

Technical Competence	Methodical Competence	Communicative Competence	Total Credits
0	20	10	30

Training Schedule and Flow

6-Day Training Journey

4 hours per day • Building from foundations to strategic design

This training provides **24 hours** of instruction, exceeding the recommended **17 hours** for deeper dives, more exercises, and comprehensive coverage.

22-Dec-2025

Day 1

Foundations

Domain, Model & Ubiquitous Language

05-Jan-2026

Day 2

Knowledge Crunching

Collaborative modeling with domain experts

06-Jan-2026

Day 3

Implementation

From model to technical implementation

07-Jan-2026

Day 4

Architecture

Model in application architecture

08-Jan-2026

Day 5

Strategic Design 1

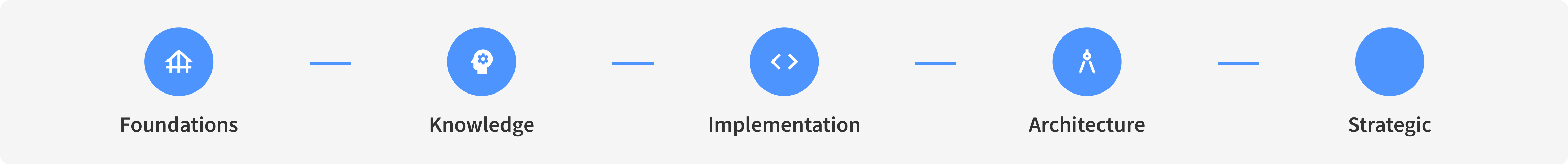
Cutting and distinguishing models

09-Jan-2026

Day 6

Strategic Design 2

Context Mapping



Foundations — Knowledge — Implementation — Architecture — Strategic

Day 1: Foundations - Domain, Model & Ubiquitous Language

1

22-Dec-2025

Foundations: Domain, Model & Ubiquitous Language

Learning Goals

✓ **LG 1-1**

Explain connections between **domains, software, and models**

✓ **LG 1-2**

Understand role of domain-specific terminology in building **ubiquitous language**

✓ **LG 1-3**

Explain building blocks of DDD (Entities, Value Objects, Aggregates, etc.)

✓ **LG 1-4**

Explain connections between building blocks

Concepts Covered

Domain & Domain Model

Software as representation of expert knowledge

Ubiquitous Language

Common terminology for experts and developers

Building Blocks

Entities, Value Objects, Aggregates, Services

Technical Components

Factories, Repositories, Domain Events

Activities & Skills

Activities

- Define a simple domain and its boundaries
- Create a ubiquitous language for a given domain
- Model basic domain concepts using class diagrams

Skills Being Built

DDD Foundations

Domain Modeling

Communication

Technical Translation

Day 2: Knowledge Crunching - The Path to the Model

2 05-Jan-2026

Knowledge Crunching: The Path to the Model

Learning Goals

- ✓ **LG 2-1 to 2-3**
  Empower **domain experts**, select suitable contacts, communicate effectively
- ✓ **LG 2-4 to 2-6**
  Use **modeling techniques**, conduct interviews, apply observation methods
- ✓ **LG 2-7 to 2-9**
  Overview of **Collaborative Modeling**, select approaches, conduct workshops
- ✓ **LG 2-10**
  Understand **agility** as foundation of DDD

Concepts Covered

- **Agile & Evolutionary Modeling**
  Iterative refinement of domain models
- **Domain Expert Empowerment**
  Leveraging expert knowledge effectively
- **Collaborative Modeling Methods**
  EventStorming, Domain Storytelling, User Story Mapping
- **Knowledge Elicitation**
  Interviewing, observation, field observation, apprenticing

Activities & Skills

Activities

- Workshop-style collaborative modeling sessions
- Role-playing interviews with domain experts
- Analyzing a domain through observation

Skills Being Built

Communication · Collaboration · Domain Analysis · Workshop Facilitation

Day 3: From Model to Implementation

3

06-Jan-2026

From Model to Implementation

Learning Goals

✓ **LG 3-1**

Extend domain model with **technical building blocks** (Repositories, Factories)

✓ **LG 3-2**

Model **interfaces** for domain classes

✓ **LG 3-3**

Account for **interactions** between implementation and model

✓ **LG 3-4**

Argue why DDD is worthwhile for **complex business logic**

Concepts Covered

Cohesion & Coupling

Principles for maintainable software design

SOLID Principles

Single Responsibility, Open/Closed, Liskov Substitution

Dependency Management

Avoiding cyclical dependencies, Law of Demeter

Technical Building Blocks

Repositories, Factories, Aggregates

Activities & Skills

Activities

- Refactoring domain model into technical components
- Designing interfaces and technical layers
- Debating benefits of DDD for complex logic

Skills Being Built

Technical Implementation

Design Principles

Refactoring

DDD Justification

Day 4: The Model in Application Architecture

4

07-Jan-2026

The Model in Application Architecture

Learning Goals

✓ **LG 4-1**

Design a **ports & adapter architecture** for the domain model

✓ **LG 4-2**

Formulate correlations and distinctions between **DDD and BDD**

Key Takeaway

Integrate domain model into larger system architecture effectively

Concepts Covered

Hexagonal Architecture

Ports & Adapters pattern for isolation

CQRS

Command-Query Responsibility Segregation

Layered Architecture

Traditional architectural approach

Dependency Injection

Inversion of Control for loose coupling

Activities & Skills

Activities

- Design hexagonal architecture for domain model
- Compare and contrast DDD and BDD approaches
- Map domain model to architectural layers

Skills Being Built

Architectural Design

System Integration

Pattern Application

DDD vs BDD

Day 5: Strategic Design 1 - Cutting and Distinguishing Models

5

08-Jan-2026

Strategic Design 1: Cutting and Distinguishing Models

Learning Goals

- ✓ **LG 5-1 to 5-2**
  Identify **symptoms** of large models, assess **cross-team models**
- ✓ **LG 5-3**
  Move from **problem to solution space**
- ✓ **LG 5-4**
  Distill the **core** of a system
- ✓ **LG 5-5**
  Describe **Bounded Contexts** in a Context Map

Concepts Covered

- **Problem Space vs Solution Space**
  Distinguishing domain problems from technical solutions
- **Subdomain Classification**
  Core, Supporting, Generic subdomains
- **Bounded Context**
  Explicit boundaries for domain models
- **Context Map**
  Visualizing relationships between contexts

Activities & Skills

Activities

- Analyze large system and identify problems
- Define Bounded Contexts and relationships
- Create Context Map for complex system

Skills Being Built

Strategic Thinking

System Decomposition

Context Mapping

Architectural Vision

Day 6: Strategic Design 2 - Context Mapping

6

09-Jan-2026

Strategic Design 2: Context Mapping

Learning Goals

- ✓ **LG 6-1 to 6-2**

  Use interfaces for **customer/supplier teams**, design **Open Host Service**

- ✓ **LG 6-3 to 6-4**

  Isolate model with **Anticorruption Layer**, reuse elements in **Shared Kernel**

- ✓ **LG 6-5**

  Understand when to divide models with **Separate Ways**

- ✓ **LG 6-6**

  Use **Domain Events** for communication between contexts

Concepts Covered

- **Customer/Supplier**

  Relationships between upstream and downstream contexts

- **Open Host Service (OHS)**

  Public API for multiple client contexts

- **Anticorruption Layer**

  Translation layer between contexts

- **Domain Events**

  Asynchronous communication between contexts

Activities & Skills

Activities

- Design inter-context communication strategies
- Map system integrations using context patterns
- Design Anticorruption Layer for external systems

Skills Being Built

Inter-context Design

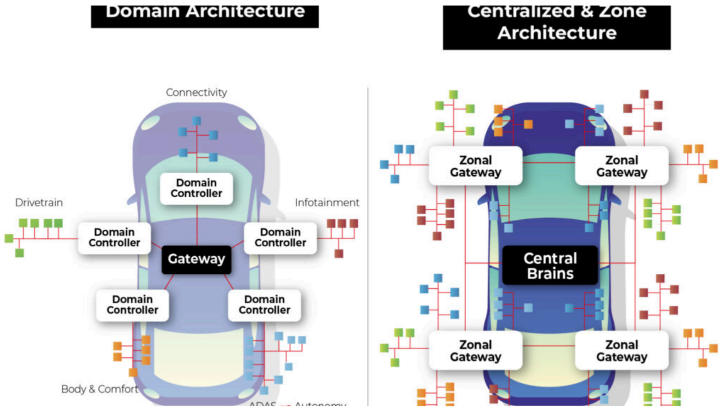
Integration Strategies

Communication Patterns

System Boundaries

Connecting DDD to the Automotive Domain and Volkswagen Projects

Automotive Software Complexity



Growing Complexity

Modern vehicles contain **100+ million lines of code** across multiple domains

Multiple Domains

Infotainment, powertrain, safety, connectivity, autonomous driving

Cross-team Collaboration

Different teams work on different vehicle subsystems

DDD Applications in Automotive

Bounded Contexts

Separate contexts for **infotainment**, **powertrain**, **safety**, **connectivity**

Context Mapping

Customer/Supplier relationships between safety and powertrain

Domain Events

Event-driven communication between vehicle subsystems

Ubiquitous Language

Common terminology for engineers, developers, and domain experts

Applying to Volkswagen Projects

Project Integration

Apply DDD to your specific Volkswagen projects

Key Applications

Infotainment Systems

EV Battery Management

Autonomous Driving

Connected Services

Fleet Management

> *"DDD helps Volkswagen teams create clear boundaries between vehicle subsystems while ensuring effective communication between them."*

Benefits

Reduced complexity, better maintainability, improved collaboration between teams

End Outcomes & Next Steps

Skills Acquired

Strategic Design

Decompose complex systems into manageable contexts

Tactical Implementation

Translate domain models into technical solutions

Collaboration

Bridge communication between domain experts and developers

Domain Modeling

Context Mapping

Event-Driven Design

Hexagonal Architecture

Value for Volkswagen Projects

Automotive Software Excellence

Design complex vehicle systems with clear boundaries

Faster Development

Reduce integration complexity between vehicle subsystems

Better Decision Making

Strategic approach to system architecture decisions

Cross-Team Collaboration

Effective communication between specialized teams

Next Steps

Apply Knowledge

Implement DDD concepts in your current Volkswagen projects

Share Learnings

Mentor colleagues and establish DDD practices in teams

Continue Learning

Explore advanced DDD patterns and automotive case studies

Pursue CPSA-A Certification Exam