

# **Lidec 2 – Sculi**

## **Advanced Controls / LMB**

**23.05.2012**



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# **LIEBHERR**

# Agenda

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- Lidec 2 Milestones
- Lidec 2 – Sculi: User Requirements
- Sculi 1 or Sculi 2
- Planning 2012 → 2015

# Stufe 4 Engine & Lidec 2 Milestones

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## Stufe 4 Motoren Planung

■ B-Muster Prototyp-Motoren (ohne AGN)	03/2012
■ C-Muster Prototyp-Motoren (LMB internal only)	06/2012
■ D-Muster Prototyp-Motoren	01/2013
■ SCRF Serien Lösung (nur für 1 Motor/Leistung/Gerät*)	01/2015
■ Einführung Emissionstufe T4f	01/2014

## LIDEC2 Planung

■ B3-Muster	04/2012
■ C-Muster	10/2012
■ D-Muster	04/2013
■ SOP	09/2013

# Lidec 2 – Sculi : User requirements

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- Markus Burri (LMB) has been defined as Key Person for the motor diagnostic
  - Responsible to define what is necessary for the motor diagnostic
  - Responsible for the definition of the features priorities
- The general features and priorities for the Lidec 2 for March 2013 have been defined (Lidec2\_user\_priorities.xlsx)
  1. Read general information of the ECU
  2. Read messages (active / passive with additional info's)
  3. Read variables (read only)
  4. Record variables over the time (oscilloscope)
- A prototype has been created (Expression Blend) in order to show how the tool will look like with the various requested features waited for this first package. This prototype has been shown and approved by Markus Burri.
- An “User Requirement” document is currently written and will define the scope and functionalities of each features. This document will require the signature of the customer services for approval.

# How to reach the goal

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■ 2 possibilities:

**1** Sculi 1: Add features for the support of Lidec 2 diagnostic

**2** Sculi 2: Starting the development of a new product

# Sculi 1 – Add features for the support of Lidec 2 diagnostic

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## ■ What are the major risks:

### ■ Software Cost Risks

- The bridge between Delphi and .Net/C# is not an easy job. A lot of time will be wasted and used for non-planned tasks.
- It is known that the current architecture of Sculi 1 is bad (approved in LWN on 21<sup>th</sup> September 2011). Adding new features implies a large risk of regressions, when shared part of code must be changed.

### ■ Software Scheduling Risks

- Only 2 persons are able to work on the Delphi part of Sculi 1.
- Lake of Delphi resources

### ■ Software Quality Risks

- The current stability problem of Sculi 1 will be also the same for the diagnostic of Lidec 2 (bad user experience)

## ■ Advantages

- Usage of the current features available in Sculi 1
- One product for all ECUs

## **Sculi 2 – Starting the development of a new product**

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### ■ What are the major risks:

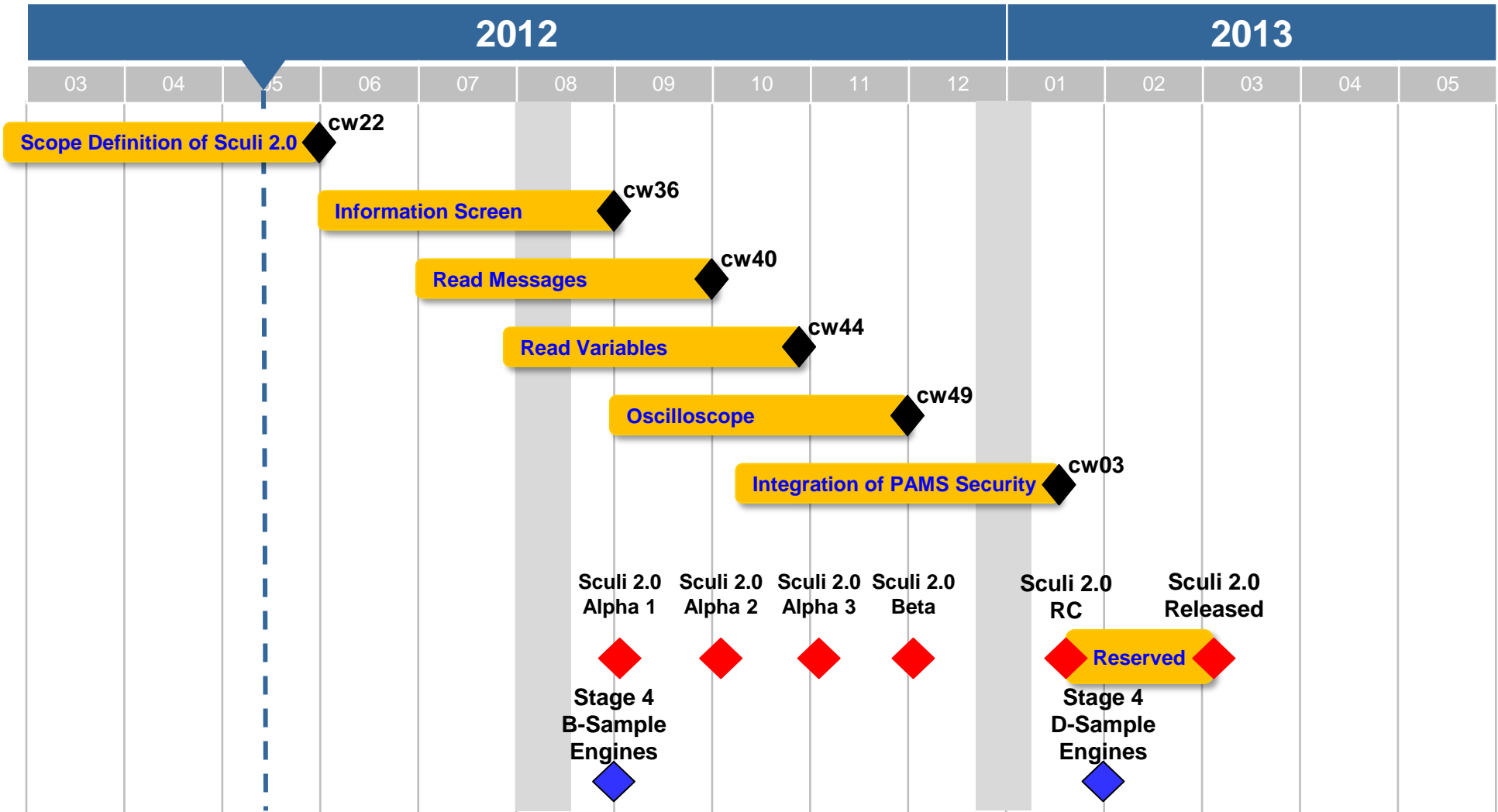
- Software Cost Risks
  - Lack of good estimation (time) in project
- Software Quality Risks
  - Until all the features of Sculi 1 are migrated to Sculi 2, the usage of two diagnostic tools will be necessary

### ■ Advantages

- The user experience can be improved and focus on what the users are really waiting for
- 100 % .Net/C# → better stability by using the .Net Framework (Windows XP / Windows 7 / Windows 8)
- All the Team is able to work in .Net/C# environment (knowledge)
- The integration of external libraries will be easier
- Future oriented

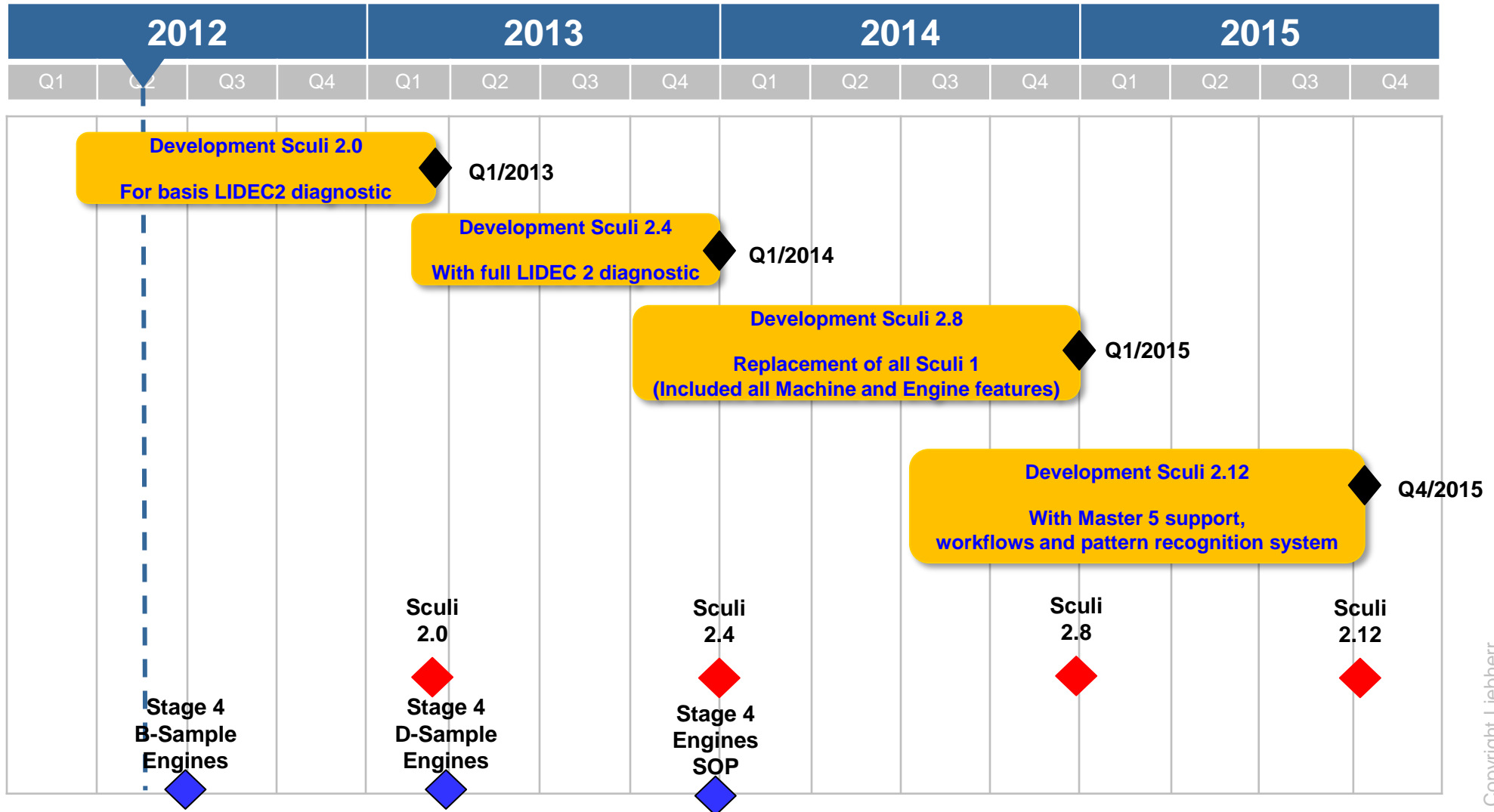
**→ Decision by Sculi Team LMB: Go ahead with Sculi2 for LIDEC2!**

# Planning Sculi 2 - Lidec 2



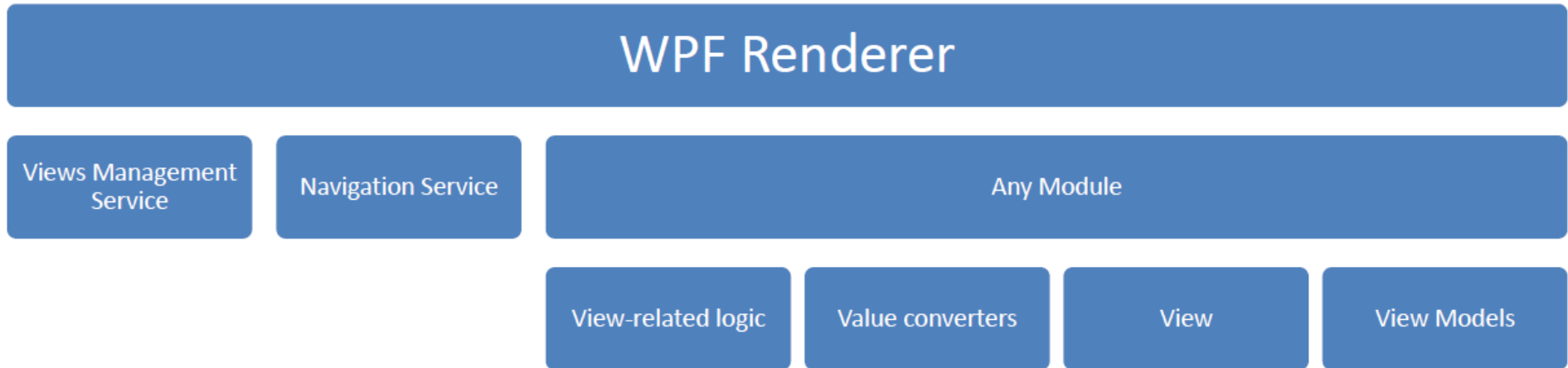


# Planning Sculi 2

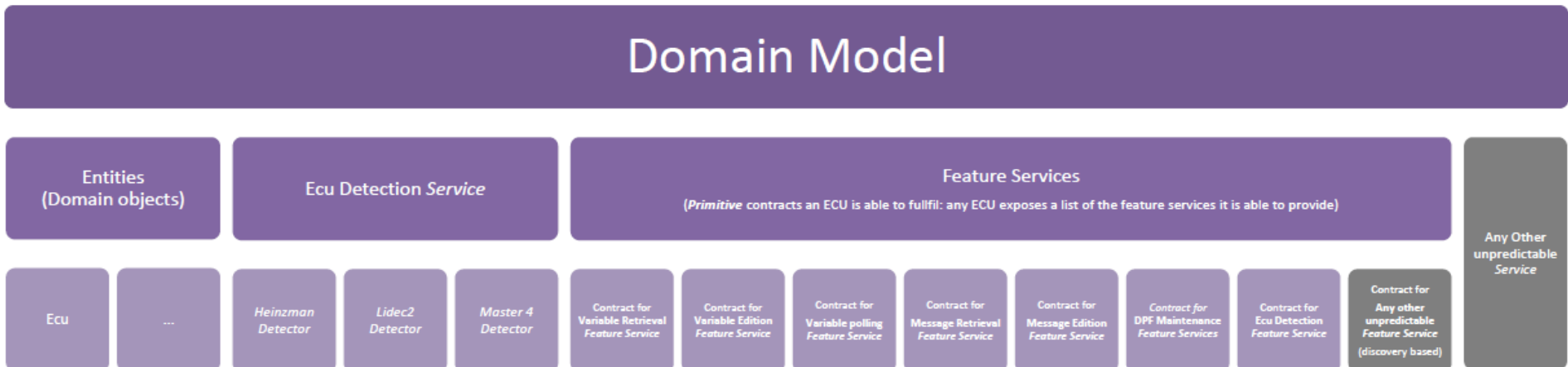


# Sculi 2 - Phase 1 Architecture

Common UI integration layer detailed.



Service Layer detailed.



Communication layer detailed.

# Sculi 2 – Phase 1 Architecture

