

VIVACE Forum1
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VIVACE

LIFE-CYCLE COST MODELLING

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Life Cycle Cost Modelling within the Virtual Engine Enterprise

What is the aim of Life Cycle Cost Modelling?

Reduce product development time and thus reduce time to bring the product into the market.

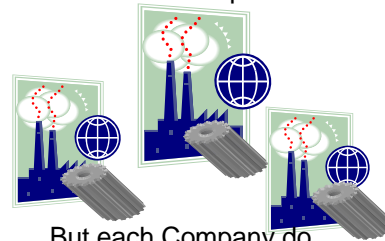
This implies reduction of development costs.

How does LCC Modelling contribute to this within VIVACE?

Collaboration of Companies necessary



A new product is expensive to develop



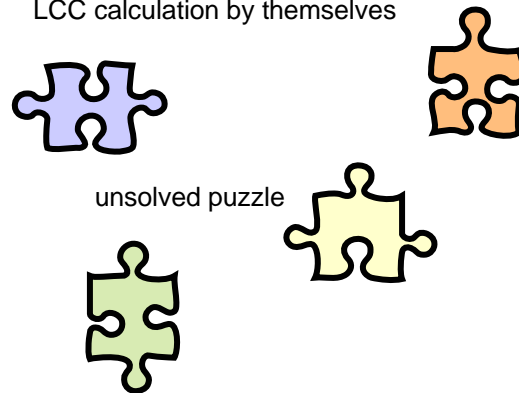
But each Company do LCC calculation by themselves



Discussion and agreement on LCC parameter, content and result is time consuming



consumes a lot of money



unsolved puzzle



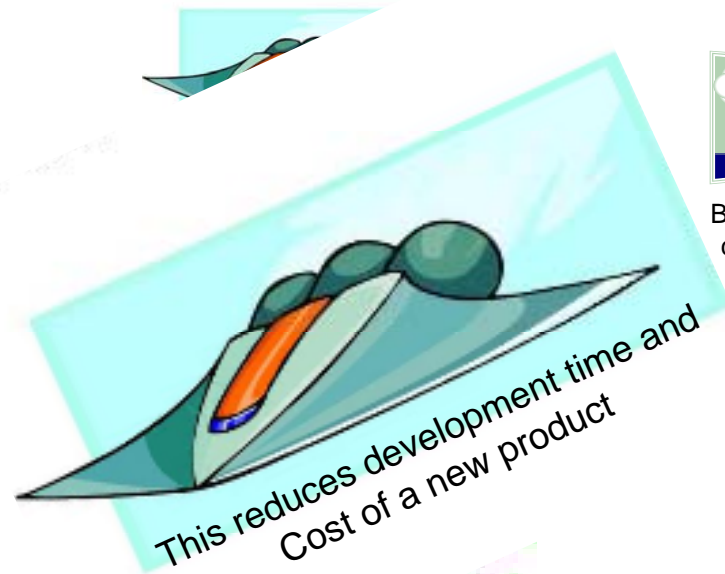
Meetings and trips are expensive



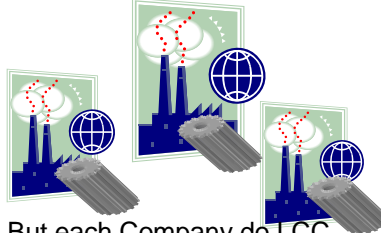
Life Cycle Cost Modelling within the Virtual Engine Enterprise

What has to be done?

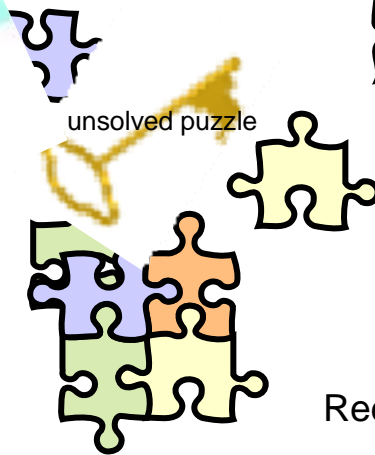
What is the key?



Collaboration of Companies



But each Company do LCC calculation by themselves

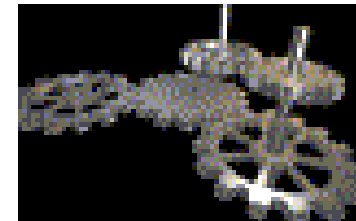


unsolved puzzle

Solve the Task



Make the wheels running homogeneously



Discuss agreement on LCC parameter, content and result is time consuming



Reduce time

Reduce trips

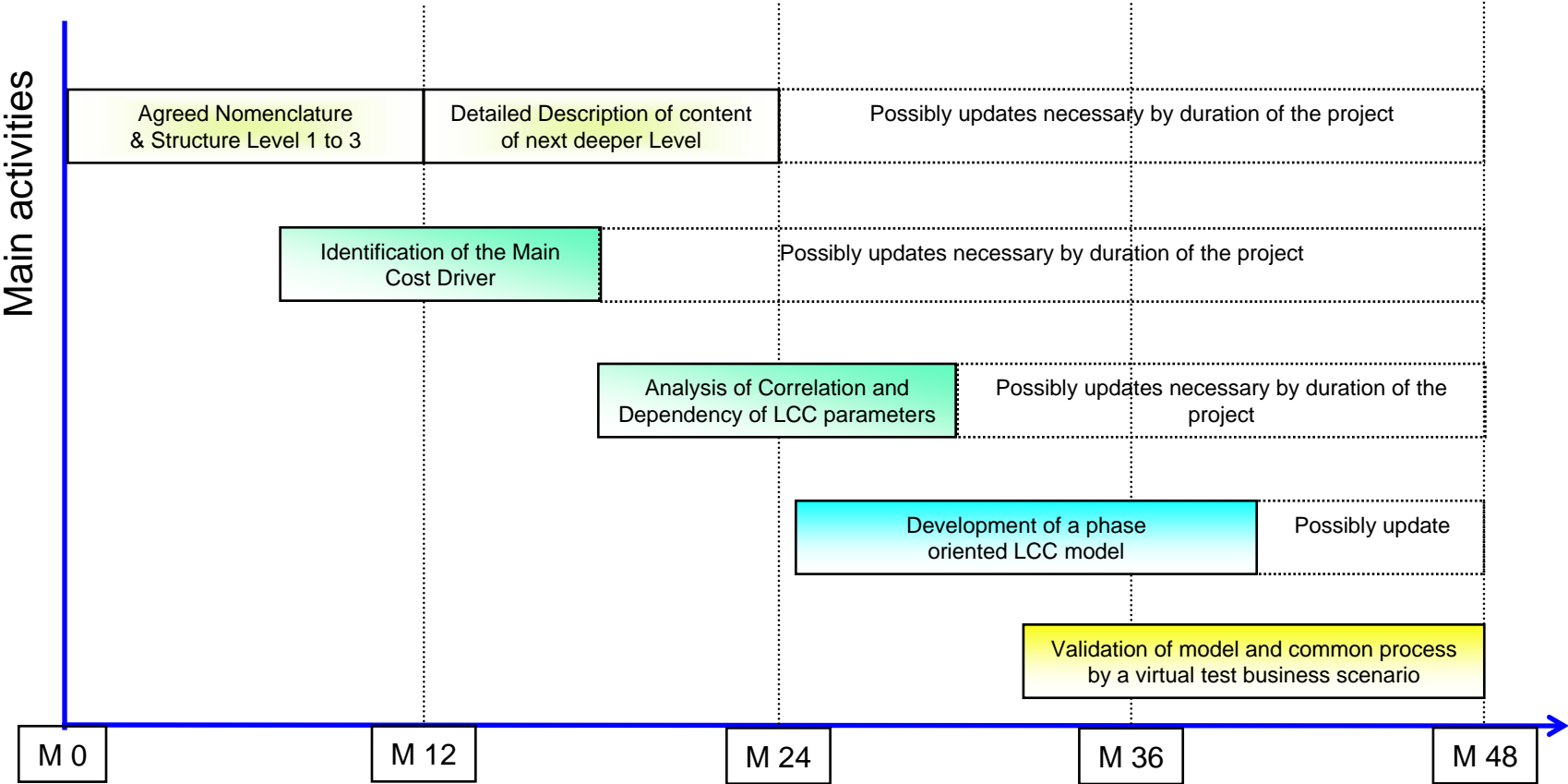


Meetings and trips are expensive



Life Cycle Cost Modelling within the Virtual Engine Enterprise

Overview of the total time period





Life Cycle Cost Modelling within the Virtual Engine Enterprise

An LCC Model needs :

To identify and define precisely each cost element of the engine life.

A nomenclature.

To assign each defined cost in an LCC phase.

An LCC breakdown structure.

A standardized LCC Model needs :

That each partner speaks the same cost language.

A standard nomenclature.

That each partner uses same inputs and understands same results.

A standard LCC breakdown structure.



Life Cycle Cost Modelling within the Virtual Engine Enterprise

Achievements

A Standardized LCC Structure

*About **150** cost elements on **4** levels.*

A Standardized European Nomenclature

*More than **300** elements were identified and discussed.*

*About **150** cost elements have been defined.*

*From **3** companies with different technical and cost cultures.*

*About **5** cost experts in each company have been consulted.*

***6** iterations to harmonize the nomenclature.*



Life Cycle Cost Modelling within the Virtual Engine Enterprise

What have we done so far – Agreement on LCC Structure Level 1 to 3

LCC NOMENCLATURE & STRUCTURE

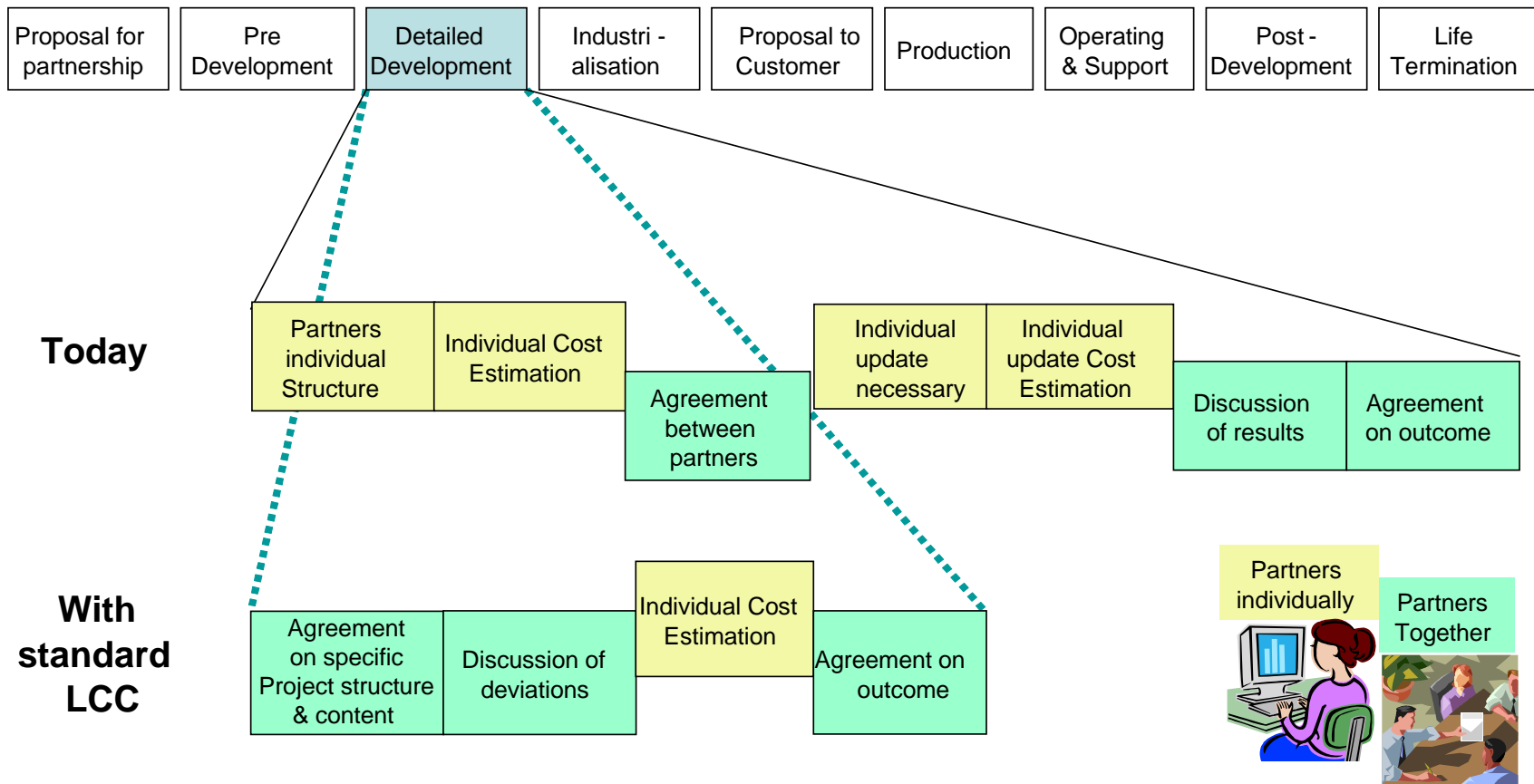
LEVEL 1	Development Cost	Industrialization Cost	Production Cost	Operating and Support Cost	Life Termination Cost
LEVEL 2	Pre-Development Cost		Purchase and Manufacturing	Initial Cost	
LEVEL 3	Engineering	Engineering	Purchase	Spare Investments	Administration Cost
	Hardware	Production Tools	Manufacturing	Ground Support Equipment	Recycling Cost
LEVEL 4	Testing	Tooling	Programme Management	Logistic Support Analysis	Scrapping Cost
	Detailed Development Cost	Investment	Engineering Support	Training	
	Engineering	Flight test engines	Financial and Commercial	Technical Publication	
	Hardware			Facilities	
	Testing			Recurrent Cost	
	Post-Development Cost			Maintenance Labour Cost	
	Engineering			Maintenance Material Cost	
	Hardware			Customer Support	
	Testing			Fuel, Oil	
				Operational Taxes	



Life Cycle Cost Modelling within the Virtual Engine Enterprise

What have we done so far – First Test Business Scenario

The benefit of a common Nomenclature & Structure





Life Cycle Cost Modelling within the Virtual Engine Enterprise

thank you!



Questions

