



Architecture-Centric Virtual Integration Workshop

Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213

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Report Documentation Page

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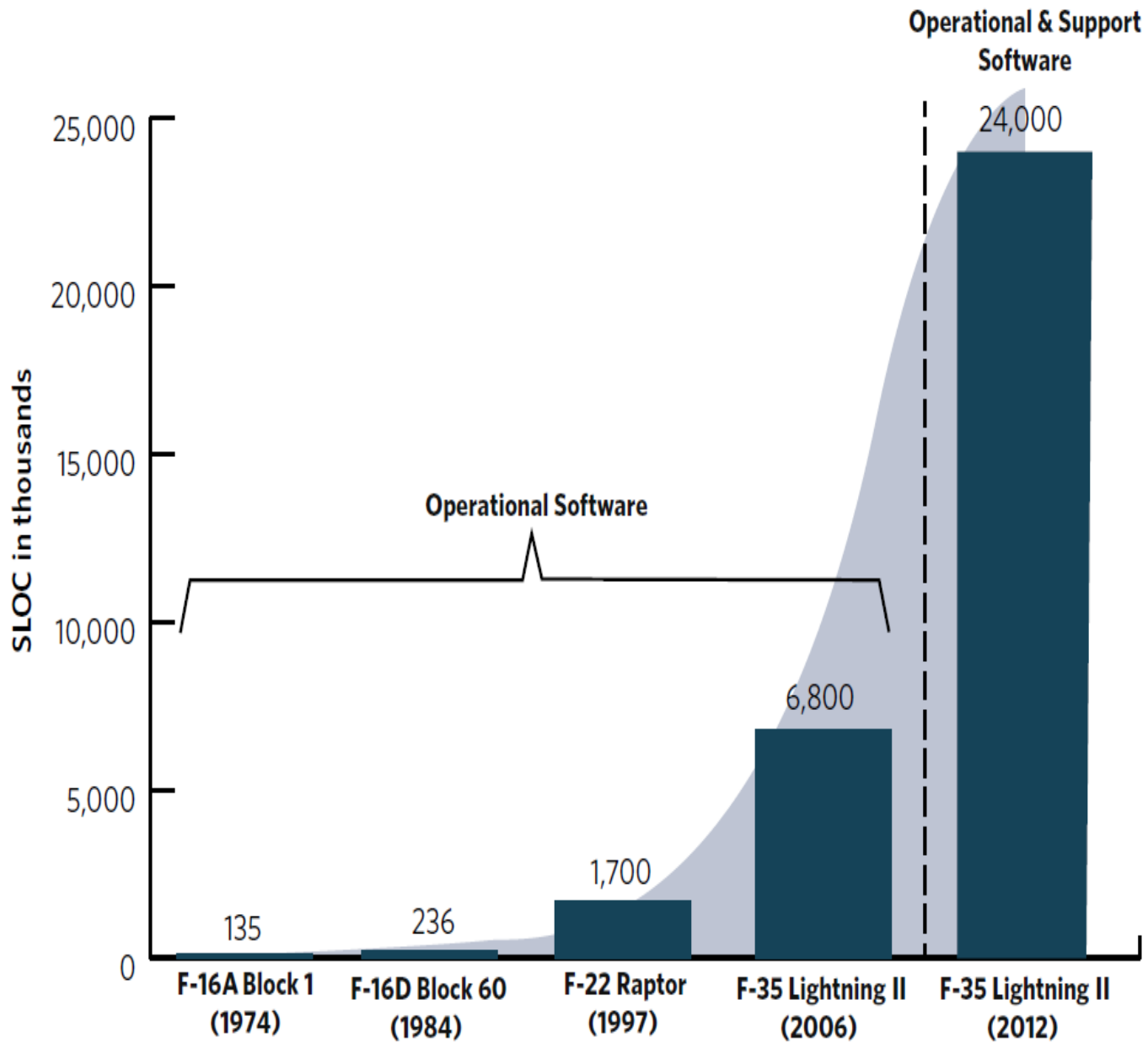
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	1960	1970	1980	1990	2000	2010
Drivetrain	• Ignition		• Fuel Injection	• Enginecontrol Otto	• FSI	• electromagn. Valves?
				• Valve control		
				• Diesel pump	• Pumpe-Düse-ECU	
					• 32bit Controller	
				• Slip control	• Hybrid	Fuel cell •
Chassis			• ABS	• ESP		• elektrohydr. Brake
				• Bremsassistent		• brake-by-wire?
					• Autom. Cruise Control	• autom.emerg. stop
					• ACC Stop+go	• UVF?
					• Lenkhilfe	• Überlagerungslenkung
						• steer-by-wire?
				• controlled Damping	• skyhook-control	
					• Wankausgleich	
Safety			• Airbag		• 2step Airbags	• Pedestrian Protect.
					• byteflight	• precrash
Comfort	• intervall Wiper		• Climate control	• Xenon-lights	• Keyless Entry	• advanced frontlighting
					• 2Motor-Wiper	
Power+Wirung	• 12V		• CAN	• D2B	• MOST, LIN	• TTP/Flexray
				• watercooled.Generator	• Startergenerator	• APU?
				• elektron. ZE	• power module	• 42V?
Information	• Radio			• Sound systems	• TV	• Infotainment
				• Satellite radio	• DAB	
				• GSM	• bluetooth	• UMTS
		• Trip computer		• GPS Navigation	• Internet	• Veh.-Veh.-Comm.



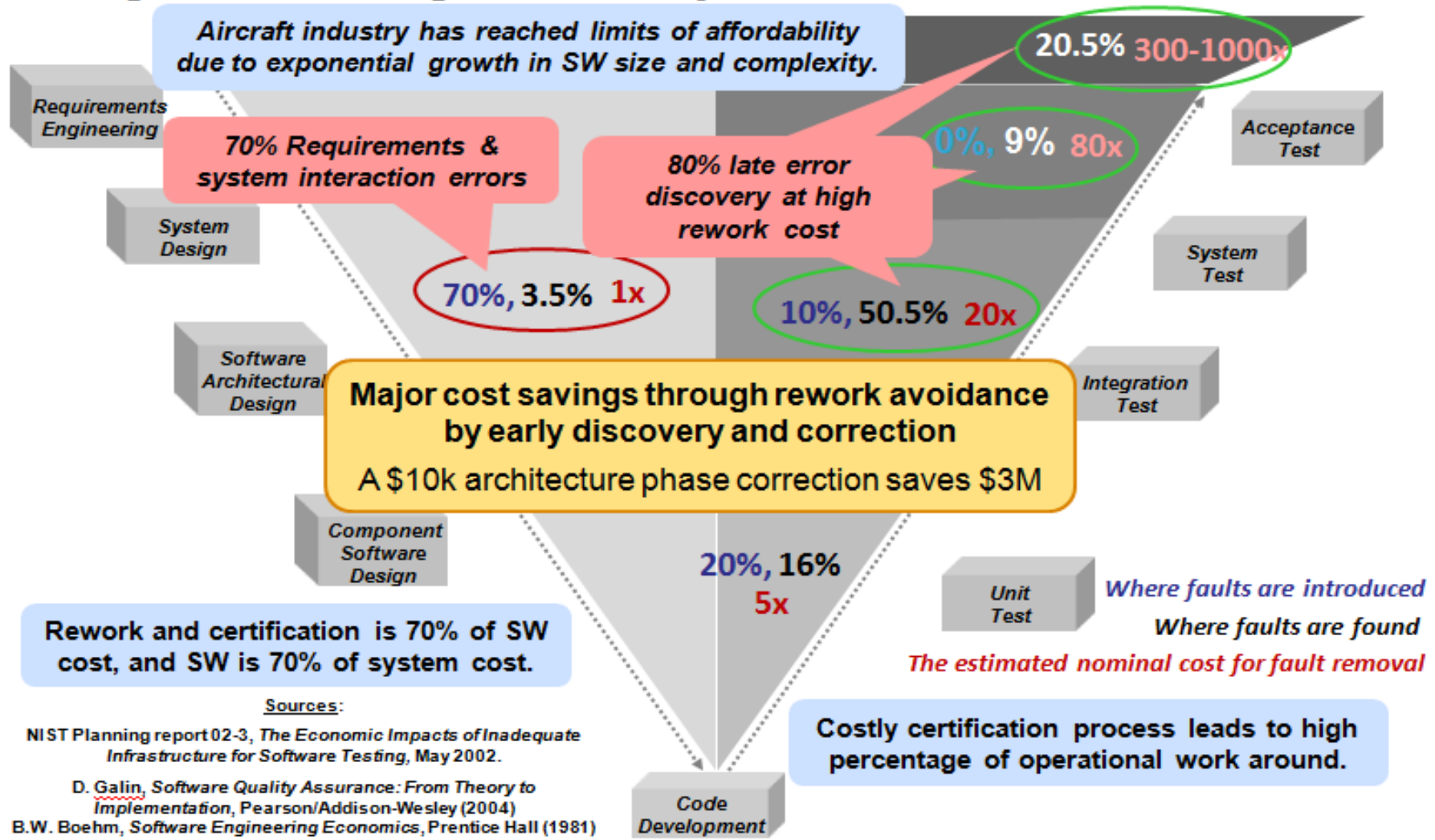


Source: Software Hierarchical Scheduling of Complex Embedded Real-Time Systems

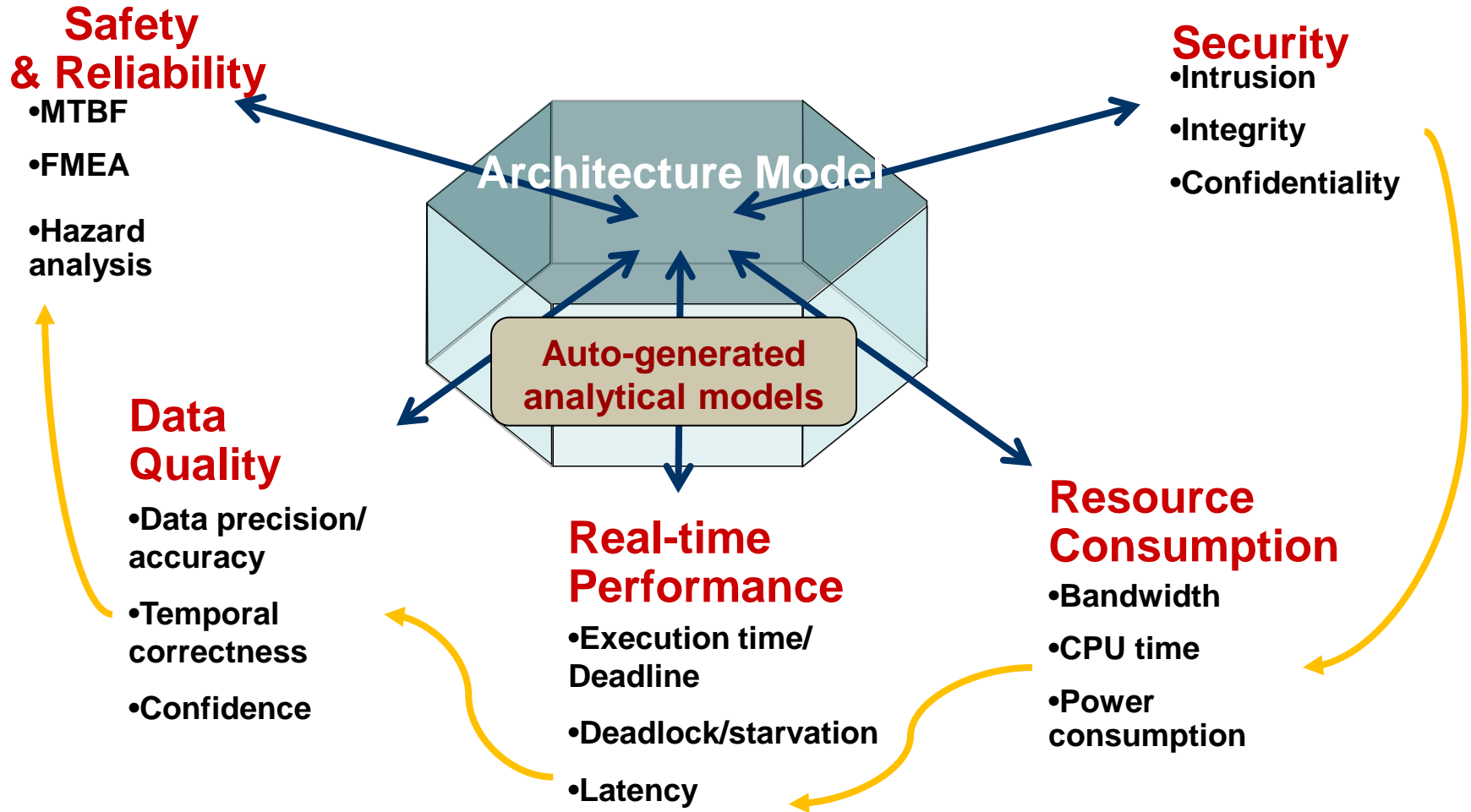
Time Systems”

Errors are introduced early but detected (too) lately

High Fault Leakage Drives Major Increase in Rework Cost



Architecture Analysis Design Language



Workshop Statistics

8 accepted papers

Connection with various safety-critical systems design aspects

International community (**Canada, France, Japan, Spain, Russia, USA**)

2 tutorials

AADL Inspector, Pierre Dissaux

BLESS, Brian Larson

Shows maturity and expansion of the technology



Workshop Program - Morning

0800-0815 - **Welcome and Workshop Presentation** - *Julien Delange*

0815-0900 - **Keynote: The Story of AADL** - *Peter Feiler*

0900-0930 - **A discrete-event simulator for early validation of avionics systems** - *Denis Buzdalov and Alexey Khoroshilov*

0930-1000 - **Executable AADL: Real-Time Simulation of AADL Models** - *Pierre Dissaux and Olivier Marc*

1000-1030 - **Automatic Derivation of AADL Product Architectures in Software Product Line Development** - *Javier Gonzalez-Huerta, Silvia Abrahao, Emilio Insfran and Bruce Lewis*

1030-1100 - **Coffee Break**

1100-1130 - **Towards an Architecture-Centric Approach dedicated to Model-Based Virtual Integration for Embedded Software Systems** - *Huafeng Yu*

1130-1230 - **AADL Inspector Tutorial** - *Pierre Dissaux*



Workshop Program - Afternoon

0200-0230 - An Extension for AADL to Model Mixed-criticality Avionic Systems Deployed on IMA architectures with TTEthernet -
Robati Tiyam, Amine El Kouhen, Abdelouahed Gherbi, Sardaouna Hamadou and John Mullins

0230-0300 - Contract-based specification and analysis of AADL models -
Ernesto Posse and Juergen Dingel

0300-0330 - Modeling Shared-Memory Multiprocessor Systems with AADL -
Stéphane Rubini, Pierre Dissaux and Frank Singhoff

0330-0400 - Coffee Break

0400-0500 - BLESS Tutorial -
Brian Larson

0500-0530 - Multi-core Code Generation from Polychronous Programs with Time-Predictable Properties -
Zhibin Yang, Jean-Paul Bodeveix and Mamoun Filali

0530-0600 - Workshop Discussion: future directions for architecture-centric research efforts? - Conclusion and Follow-Up -
Moderator: Julien Delange



AADL standardization committee

Located in the conference area at Innova Room

Discussions on AADL evolution (ballot, new annexes, etc.)

Free attendance, contributions are welcome



Post-Workshop Dinner

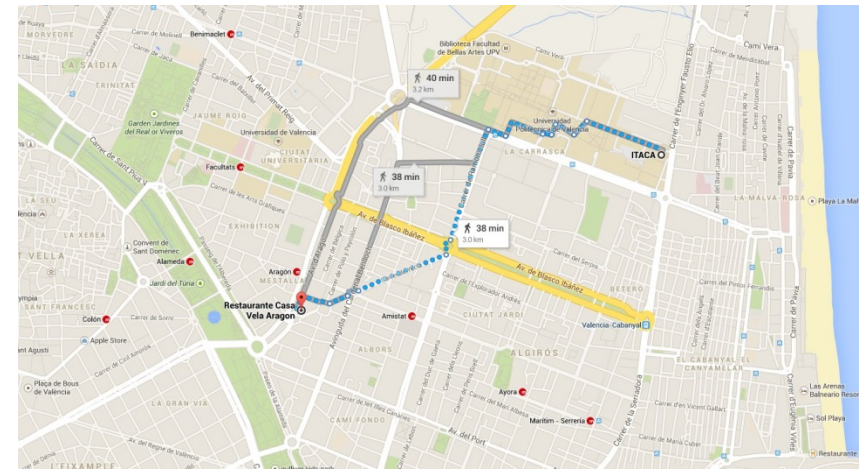
Meeting the AADL community in a great location

Located at Casa Vela (Aragón), Avenida Aragón, 24, 46021 Valencia

Fix price, 25 euros including tapas, wine and desert

About 3 Km from the conference

<http://www.aadl.info/acvi>



Enjoy the workshop

Thanks to the conference organizers ...

... especially to Emilio and all local organizers!

Join the post-workshop dinner

Details online, check <http://www.aadl.info/aadl/acvi/>

Please provide feedback, suggestions, comments

E-mail: acvi14@easychair.org

Engage participation to next edition



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