

# The Role and Task of the System Architect

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## Abstract

The role of the system architect is described from three viewpoints: deliverables, responsibilities and activities. This description shows the inherent tension in this role: a small set of hard deliverables, covering a fuzzy set of responsibilities, hiding an enormous amount of barely visible day-to-day work.

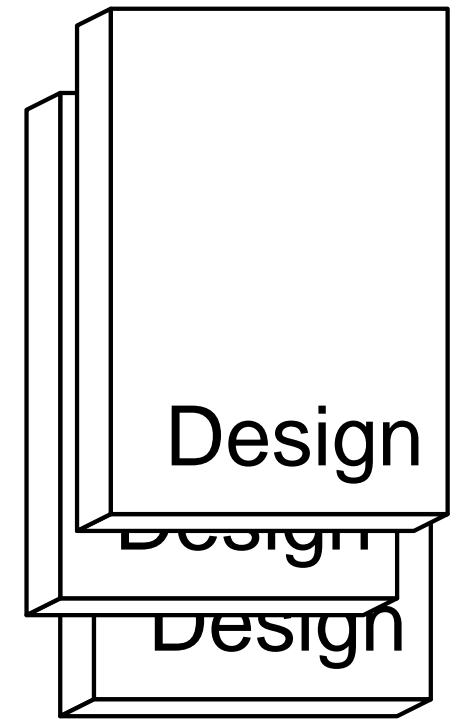
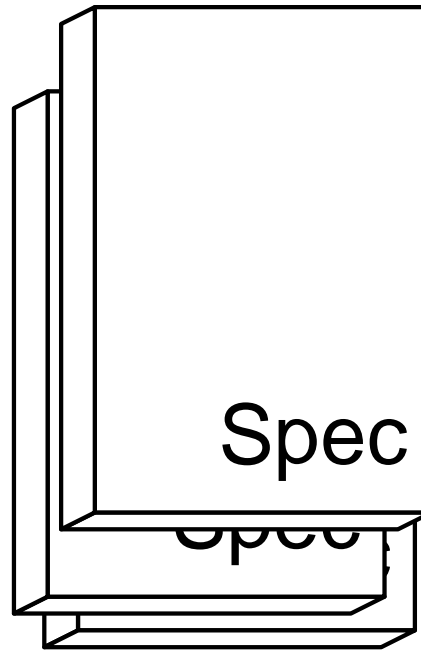
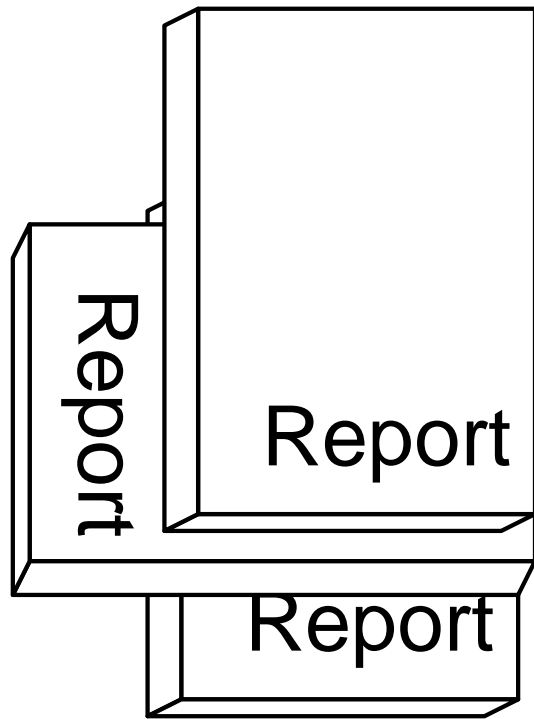
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# Deliverables of the System Architect



# List of Deliverables

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Customer and Life-Cycle Needs (*what is needed*)

System Specification (*what will be realized*)

Design Specification (*how the system will be realized*)

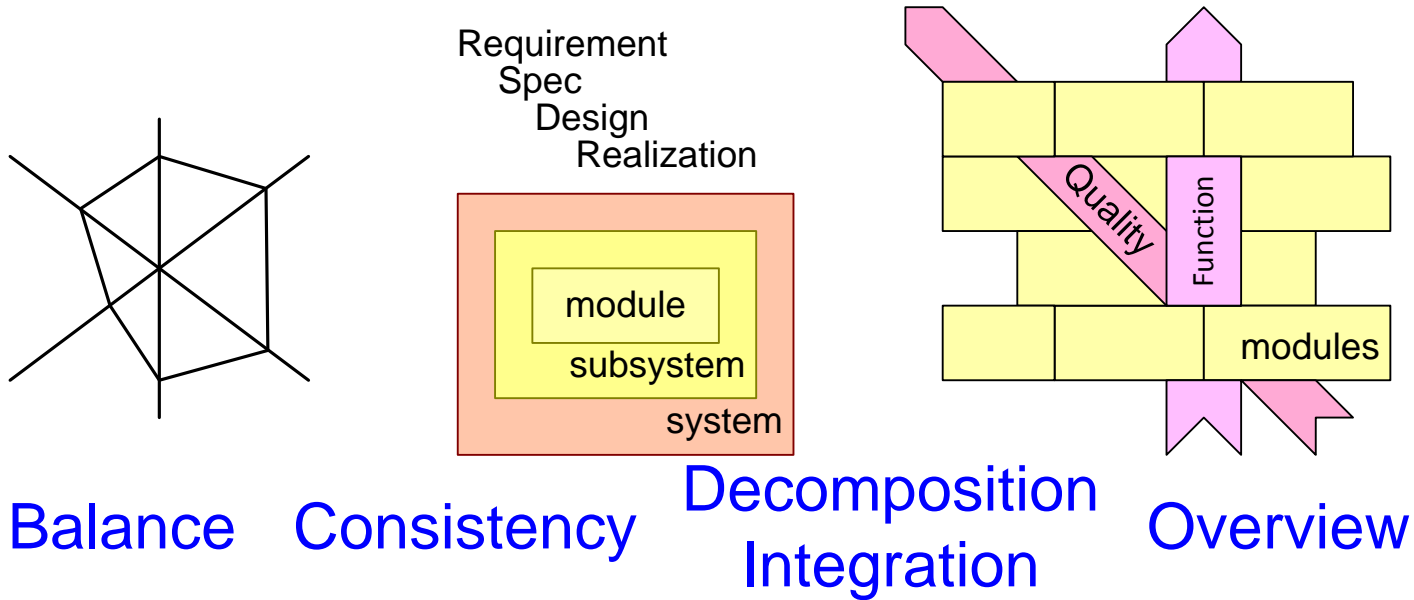
Verification Specification (*how the system will be verified*)

Verification Report (*the result of the verification*)

Feasibility Report (*the results of a feasibility study*)

Roadmap

# Responsibilities of the System Architect

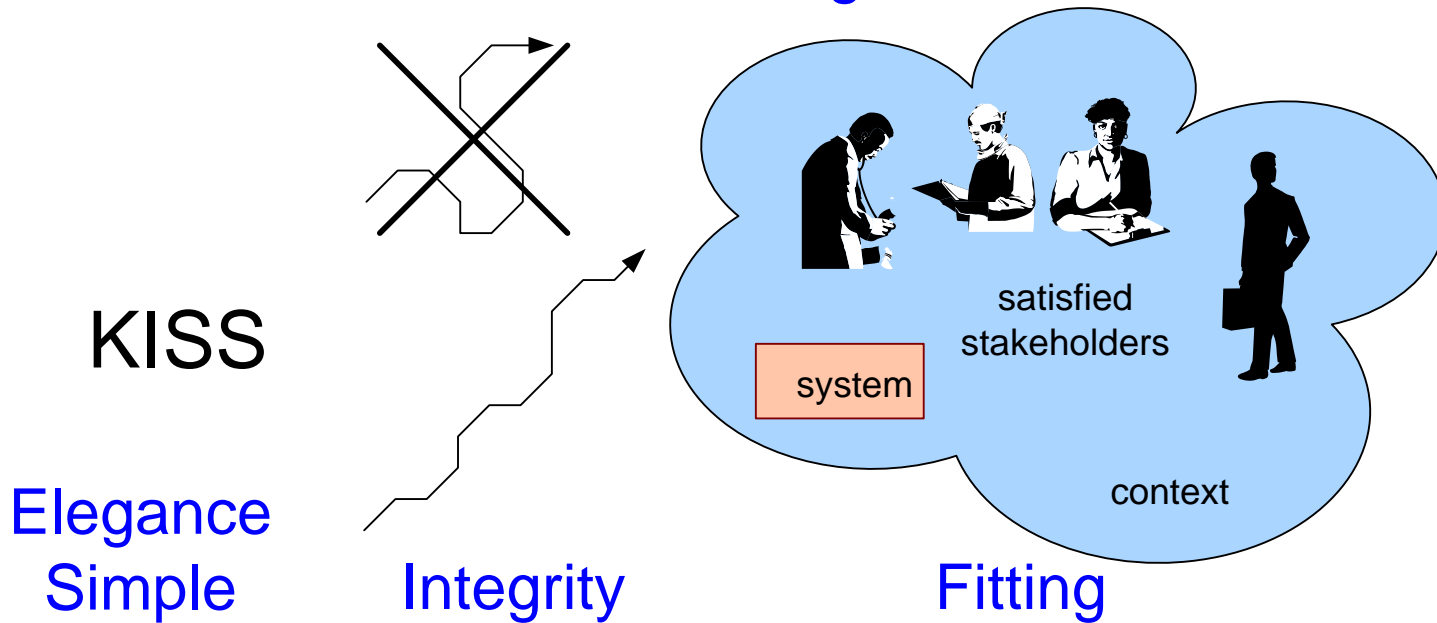


Balance

Consistency

Decomposition  
Integration

Overview



KISS

Elegance  
Simple

Integrity

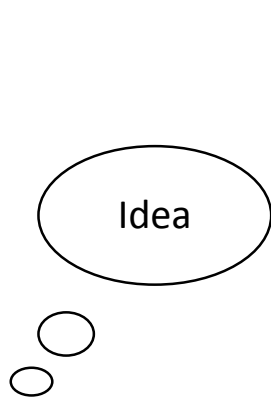
Fitting

# Examples of Secondary Responsibilities

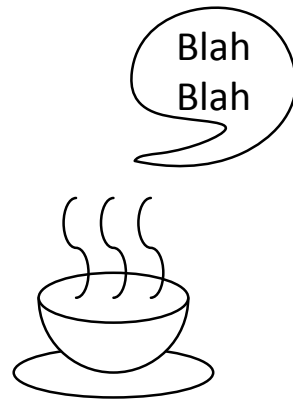
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responsibility	primary owner
business plan, profit	business manager
schedule, resources	project leader
market, saleability	marketing manager
technology	technology manager
process, people	line manager
detailed designs	engineers

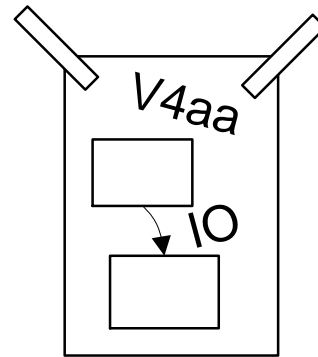
# What does the System Architect do?



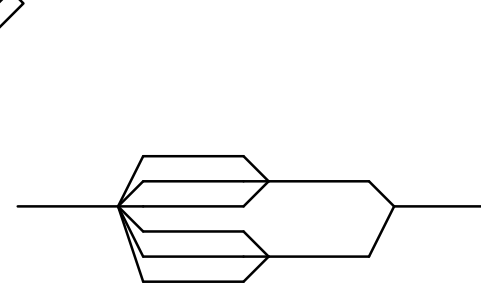
think,  
analyze



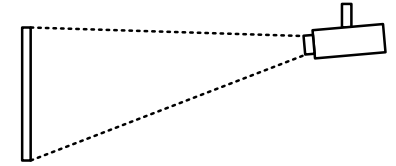
listen, talk,  
walk around



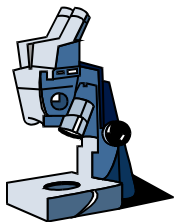
design,  
brainstorm,  
explain



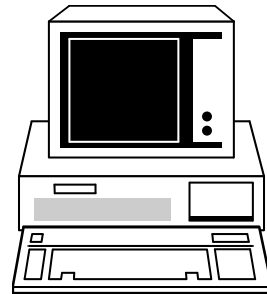
assist project leader  
with work breakdown,  
schedule, risks



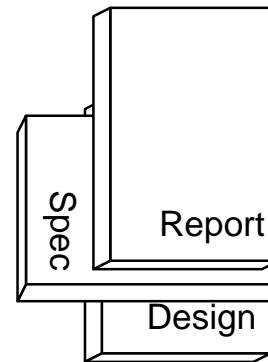
present,  
meet, teach,  
discuss



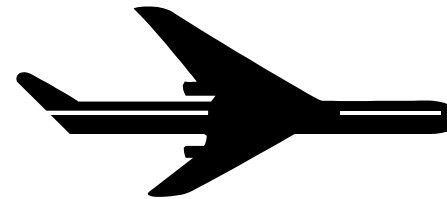
test,  
integrate



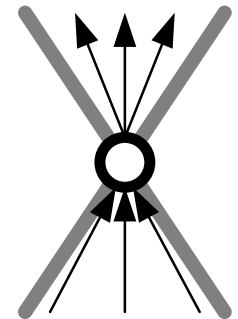
write,  
consolidate,  
browse



read,  
review



travel to  
customer,  
supplier,  
conference



provide  
vision and  
leadership

# From Detail to Overview

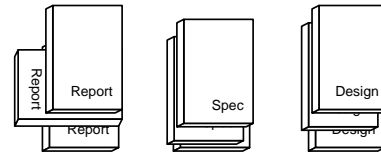
		Quantity per year (order-of- magnitude)	architect time per item
consolidation in deliverables meetings informal contacts sampling scanning	→ driving views	10	100 h
	→ shared issues	$10^2$	1 h
	→ touched details	$10^4$	0.5 – 10 min
	→ seen details	$10^5 - 10^6$	0.1 – 1 sec
	→ product details	$10^7 - 10^{10}$	
	real-world facts	infinite	

Abstractions only exist for concrete facts.

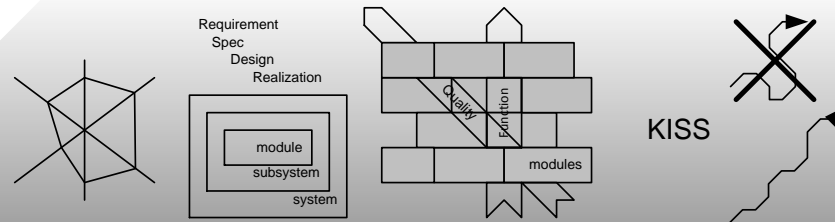


# Visible Output versus Invisible Work

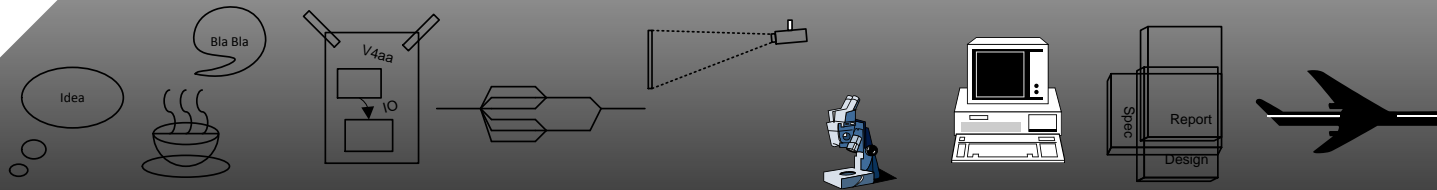
From Manager perspective



Deliverables



Responsibilities



Activities