

# Systems Engineering Research; Examples of Flow and Methodology

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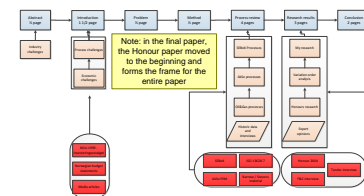
## Abstract

Research in System Engineering requires a mixture of research methods. It is a challenge to capture the various aspects in a logical flow. The research methodology is also a significant challenge. This presentation shows examples of past research of visualizing the paper flow and the research methodology.

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**Eldar Tranøy** won the **Best Student Paper Award** at INCOSE 2014 in Las Vegas with the paper

“Reduction of Late Design Changes Through Early Phase Need Analysis”

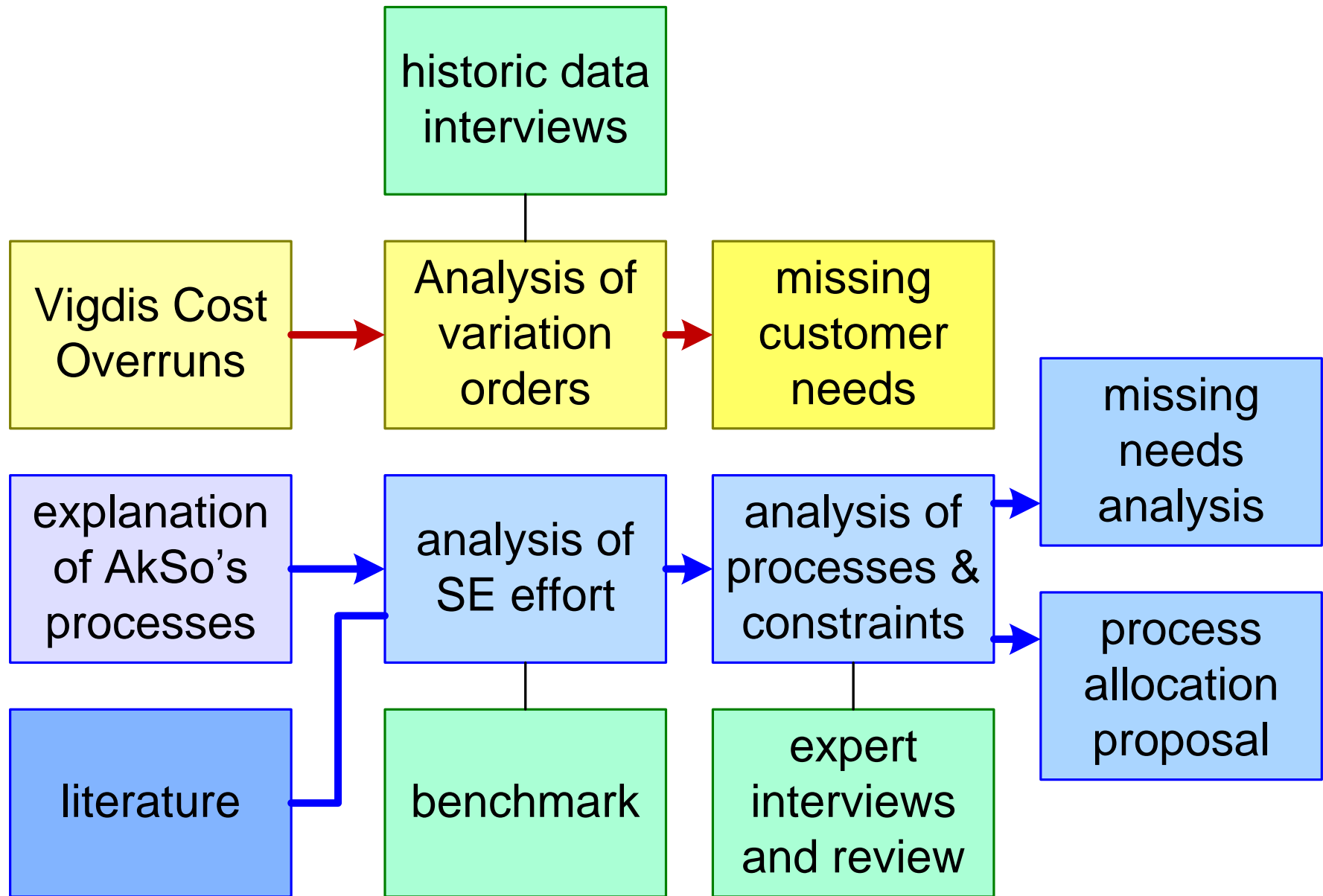
available at [http://gaudisite.nl/INCOSE2014\\_Tran%C3%B8y\\_Muller\\_ReductionOfLateDesignChanges.pdf](http://gaudisite.nl/INCOSE2014_Tran%C3%B8y_Muller_ReductionOfLateDesignChanges.pdf)

The following slides show some of the attempts of finding the flow for this paper by Eldar Tranøy and the academic supervisor.

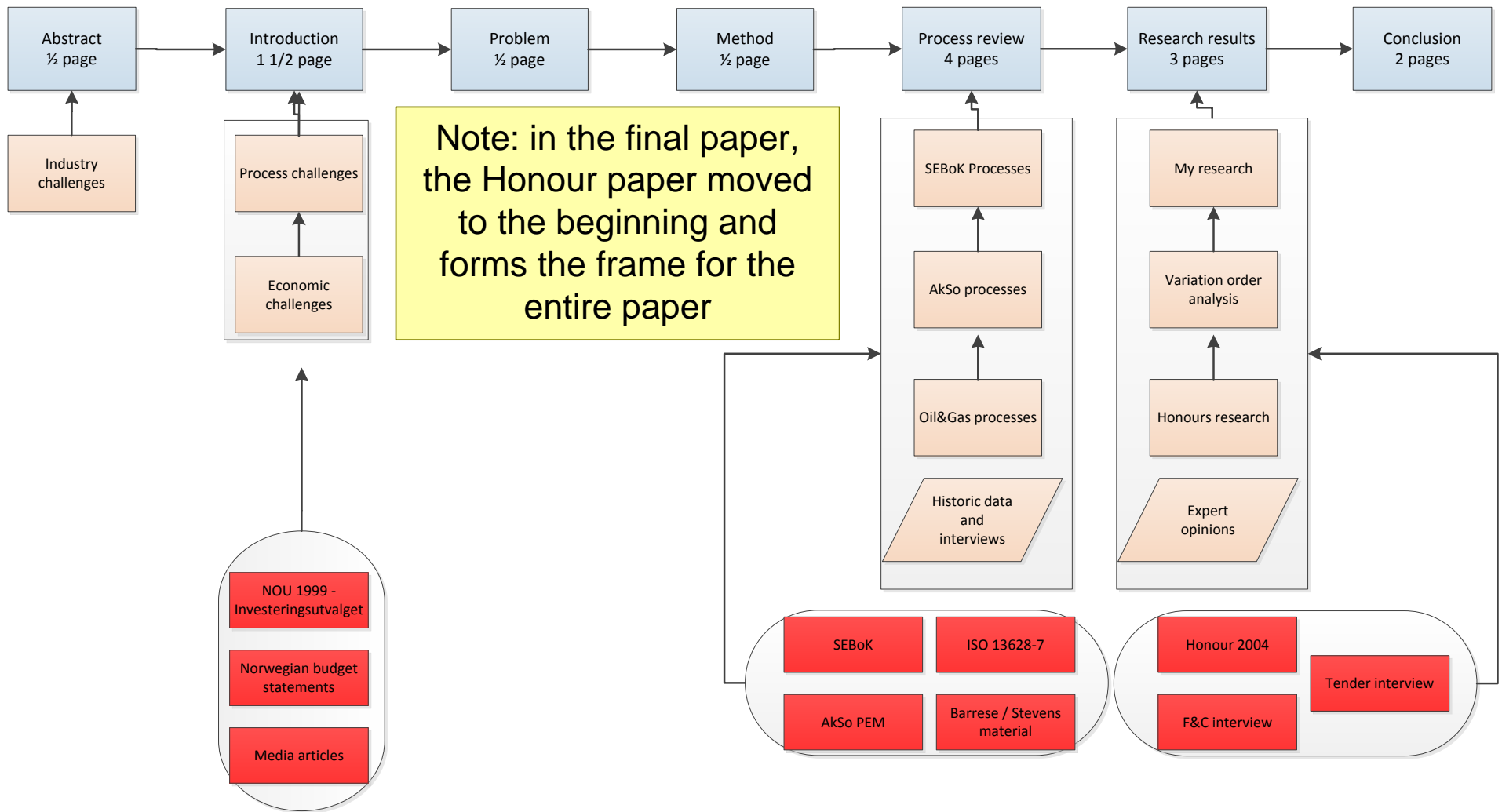
# Meta Levels and Scopes by Supervisor

	Meta <sup>0</sup> system-of-interest	Meta <sup>1</sup> SE methods	Meta <sup>2</sup> research methodology
↑ scope	Systems Engineering Body of Knowledge	SE BoK generic SE processes	Eric Honour's research
SubSea Oil&gas domain		SubSea Oil&gas SE processes	
SubSea Equipment Supplier	Vigdis subsea installation	AkSo's SE process	Eldar's research
	→ Meta (abstraction) level →		

# Paper Flow Proposed by Supervisor



# The Book Plan that Eldar Made at the Start



**Linda Lønmo** wrote the paper

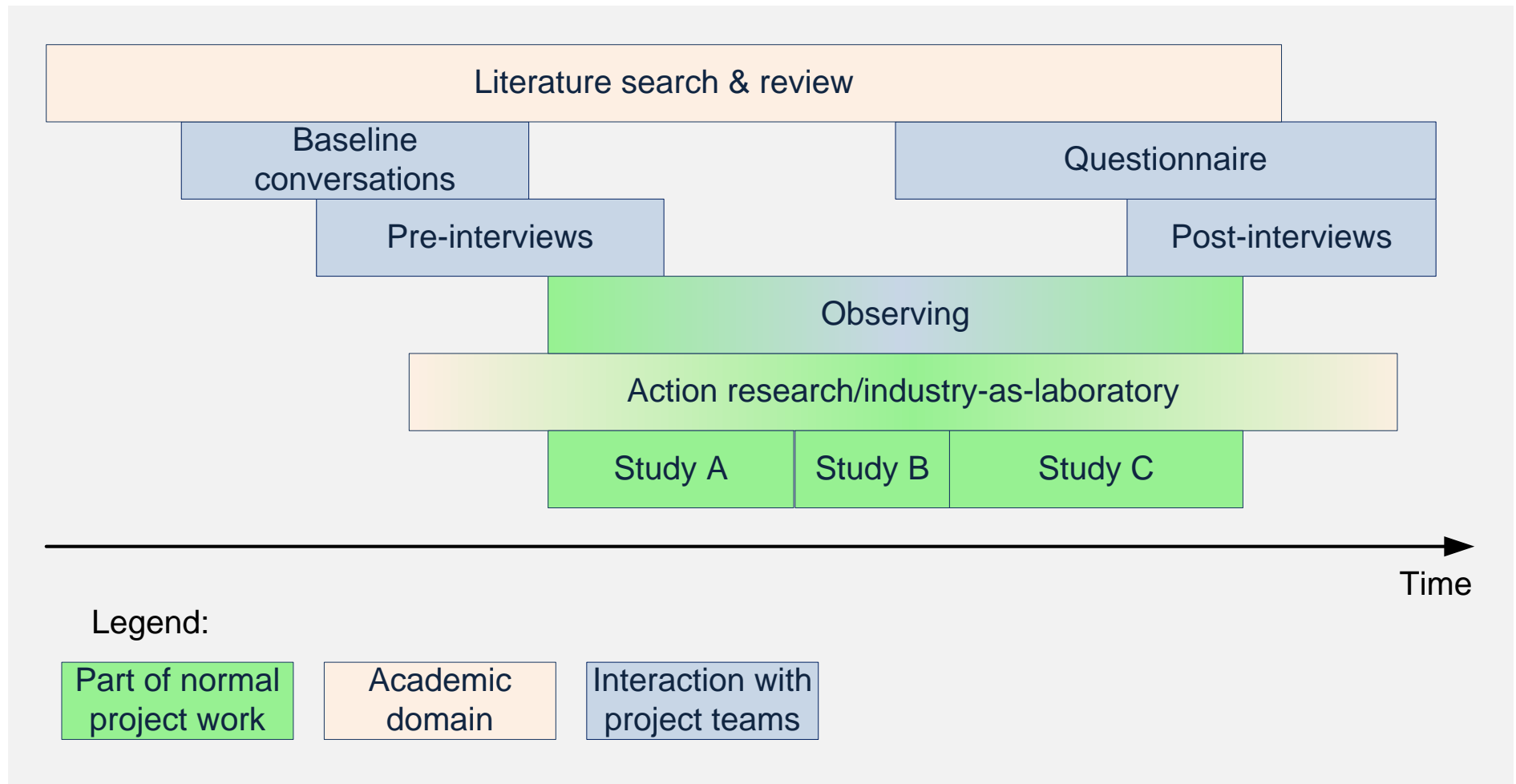
“Concept Selection - Applying Pugh Matrices in the  
Subsea Processing Domain”

for INCOSE 2014 in Las Vegas

available at [http://gaudisite.nl/  
INCOSE2014\\_Lonmo\\_Muller\\_ConceptSelection.pdf](http://gaudisite.nl/INCOSE2014_Lonmo_Muller_ConceptSelection.pdf)

The following slide shows the visualization of the research methodology by Linda Lønmo.

# Example Research Methodology by Linda



from: "Concept Selection - Applying Pugh Matrices in the Subsea Processing Domain" by Linda Lønmo  
INCOSE 2014 in Las Vegas [http://gaudisite.nl/INCOSE2014\\_Lonmo\\_Muller\\_ConceptSelection.pdf](http://gaudisite.nl/INCOSE2014_Lonmo_Muller_ConceptSelection.pdf)