Abstract
An abstract is a brief description of the content of a paper to facilitate readers in deciding to read the paper. This presentation explains how to write an abstract. Normally, an abstract is written at the end of writing a paper. For the master project, we challenge students to write an abstract up front, to stimulate them to think through the entire project, including the expected outcome.
"A good abstract should answer three questions:

What did I do,

what did I learn,

and why is that important?

The key is to identify something or things that can be reused in the future."

Prof. Michael Pennotti, Stevens Institute of Technology
"fast forward" yourself into the future what do you expect to be the project outcome?

Students write an initial abstract at the start to think through what can happen. At the end of writing the paper, you write the real abstract. The academic supervisor has to accept the initial abstract before starting the project.
Multiple Levels of Academic Abstraction

- **meta**
  - **bottom line:** system-of-interest
  - **enabling:** systems engineering methods
  - **academic:** research of methods

**meta**

work over system
missile
production line
turbine package
tie-in system

**meta**

stakeholders and concerns
ConOps
operational needs
need statement
needs into requirements
SMART requirements
concept selection
partitioning and interfaces
documenting the architecture
knowledge management
conceptual modeling
budget based design
integration and verification plan
design of qualification program

**meta**

measuring
experimenting
modeling
surveys
interviews
refering to literature
argumenting

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Master Project; Writing an Abstract
Gerrit Muller

version: 0
September 21, 2014
MPWAmeta
Value per Meta-level

case

SE body of Knowledge

meta$^0$

*bottom line:*
system-of-interest

earning money

meta$^1$

*enabling:*
systems engineering methods

re-use
in future projects
in other domains

meta$^2$

*academic:*
research of methods

validation of
method
re-use
Content of Paper

**case**

**SE body of Knowledge**

**meta\(^0\)**
*bottom line:*
system-of-interest

set the context
where did you apply

domain
system-of-interest

**meta\(^1\)**
*enabling:*
systems engineering
methods

what did you apply and why

systems engineering
challenge/need
methods, expected benefit

**meta\(^2\)**
*academic:*
research of methods

what can we learn
based on what findings

observations
argument

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MPWAmetaPaperContent
Write an abstract

in 3 paragraphs

use 2 sentences per paragraph

100..150 words in total