

Cycle Ingénieur – 2^{ème} année
Département Informatique

Verification and Validation

Overall Motivation

Burkhart Wolff

Département Informatique
Université Paris-Sud / Orsay

Why is it important to get software right?



Why is it important to get software right?

- Since information technology becomes more and more pervasive, the risks become more important
 - Reliability, Safety and Security becomes more critical :
 - transport systems (Cars, Métros, TGV), aviation controls, aerospace, ...
 - critical industrial processes, nuclear power plants, weapons, ...
 - medical technologies: tele-surgery, radiation control...
 - critical telecommunication infrastructures and networks,
 - electronic commerce

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This should be the most important reason,
but actually, it isn't.

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- The more likely reason is:

it is so expensive if you don't !!! (It's the economy, stupid !)

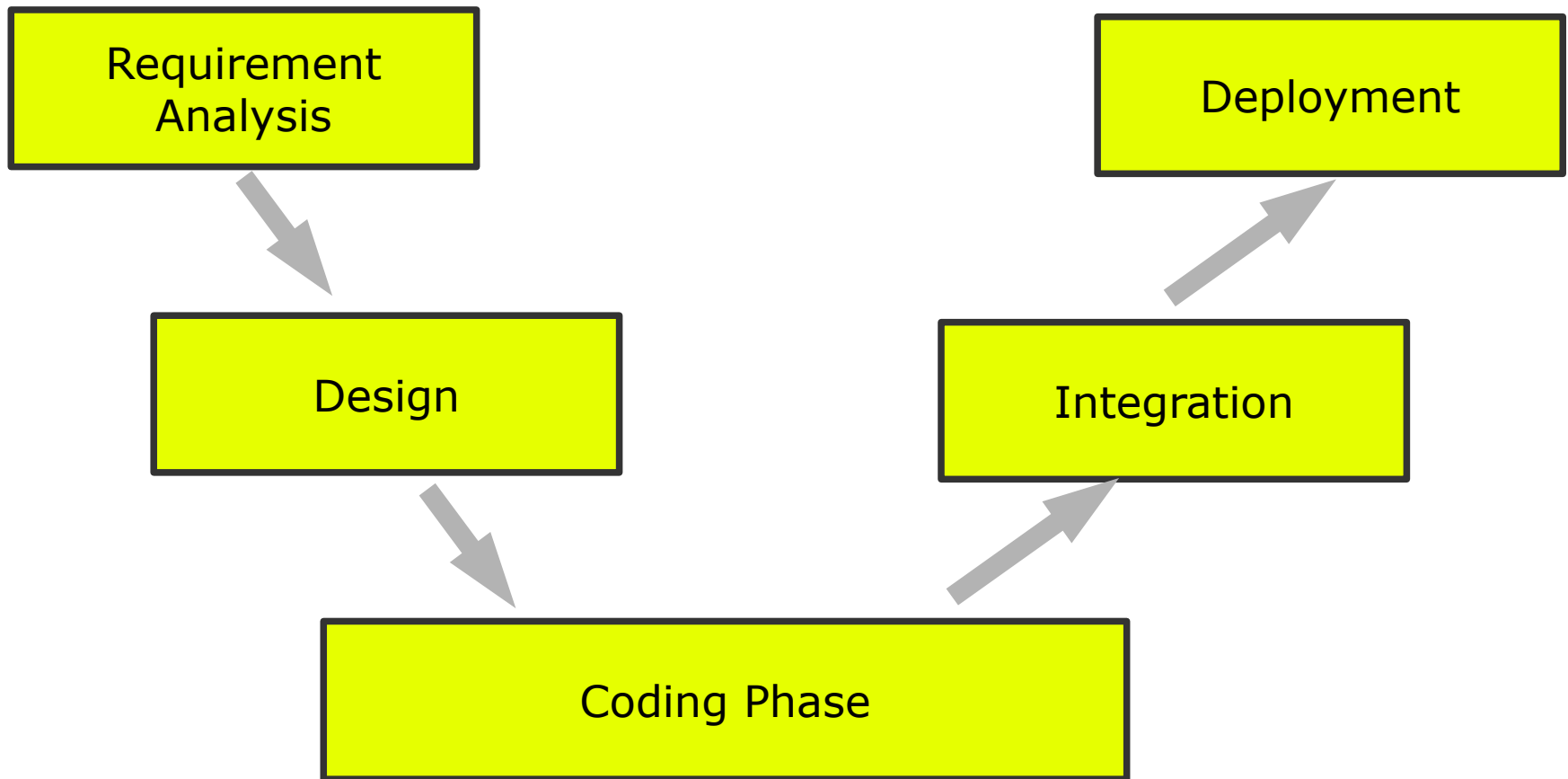
50 % of the overall costs were spent for test and verification in large software projects ... So, if the development of MS Vista cost 8 billion \$...

- Another reason is:

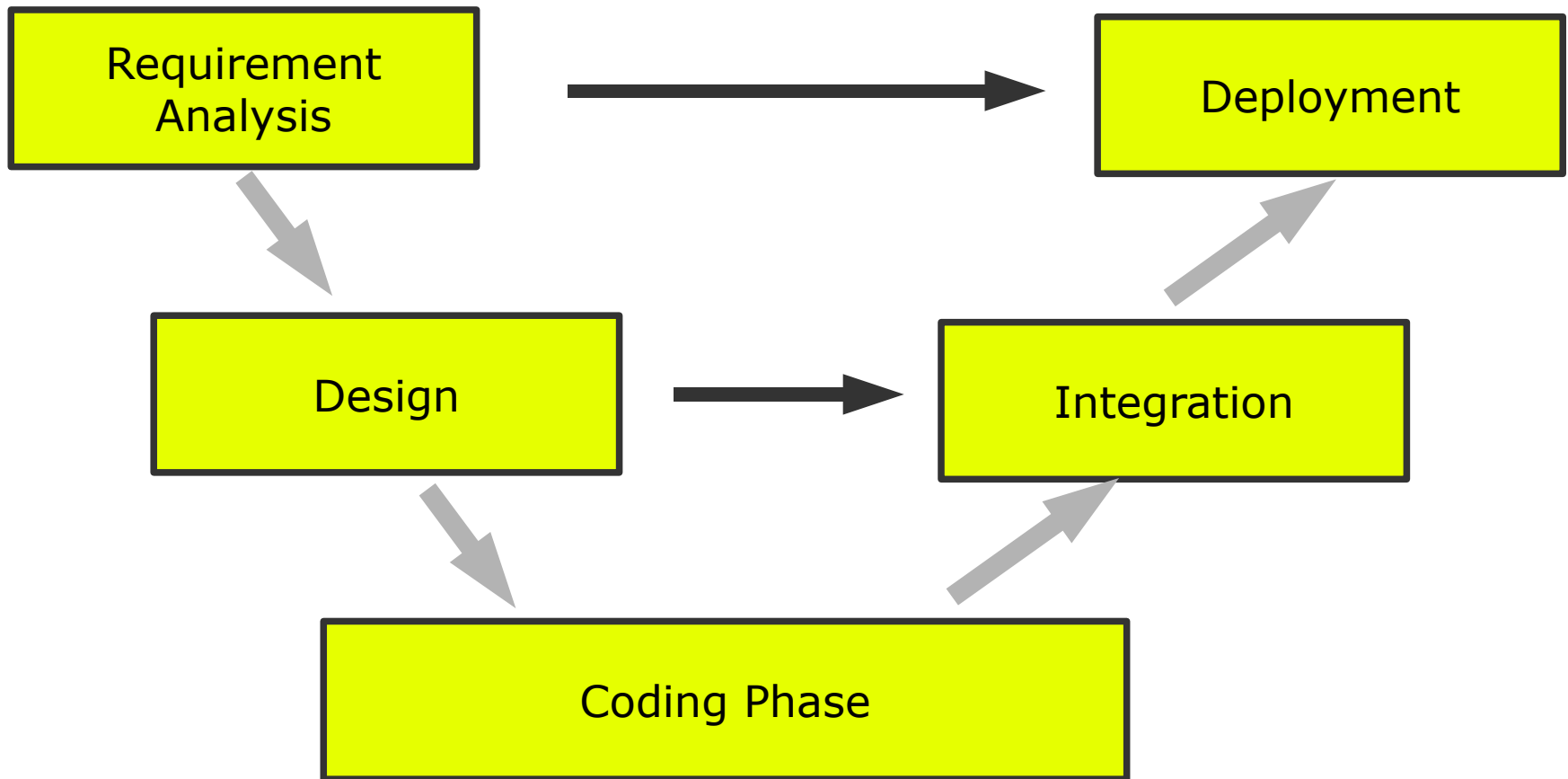
We want to build more complex systems, and validation and verification techniques are a limiting factor!

We simply can't do it without !

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each of these phases in the software engineering process is complicated, but making all this work together is –

well, challenging.

In this course, we study the techniques that make sure that a component does, what it was planned to do.