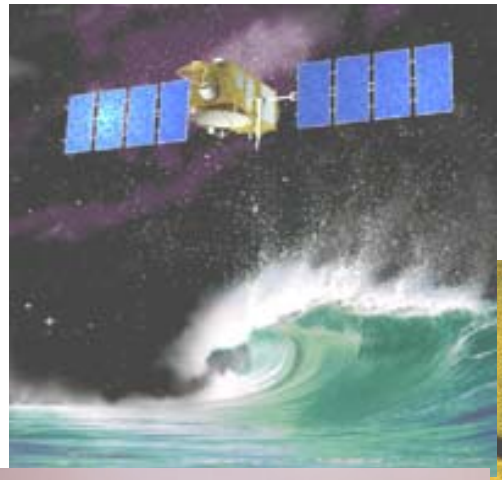
Tony Elliston

SIGADA 2003

tNi Europe

OO TOOL SUPPORT FOR AADL and HOOD



Model Based Real-Time Software Design

tools for mission critical software development

About the TNI Group

- Software Engineering
- Hardware design
- Requirement traceability
- Formal validation

70 Engineers

Aerospace

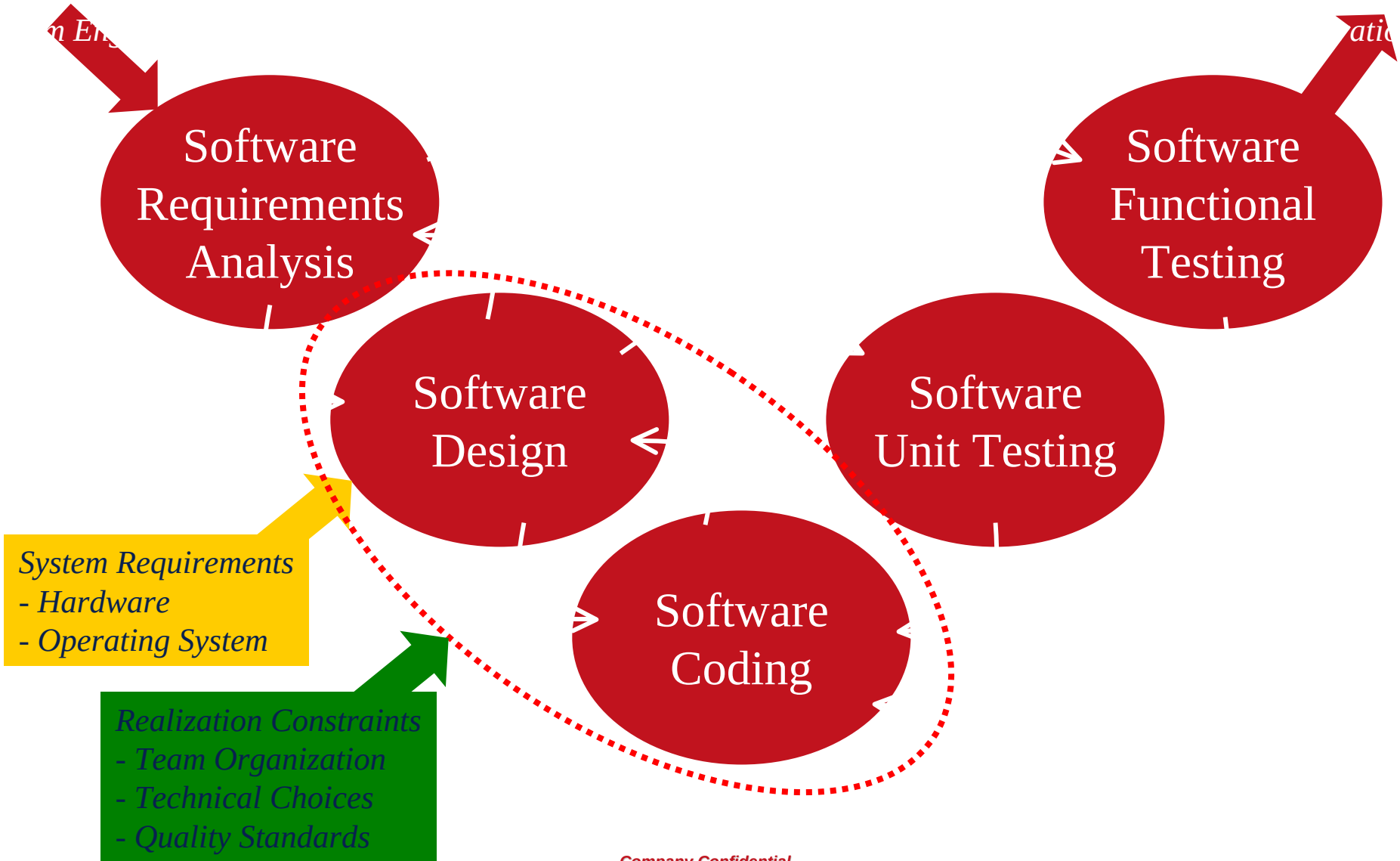
Industrial Automation

Telecom

Semiconductor

Automotive

Software Design



SOFTWARE PRODUCTS

CP HOOD

STOOD

REQTIFY

ORCHIS

COSIMATE

CONTROLBUILD

MAJOR PROJECTS USING CP HOOD?

EUROFIGHTER TYPHOON

TORNADO

NIMROD

HAWK

HARRIER

AM346

Reqtify

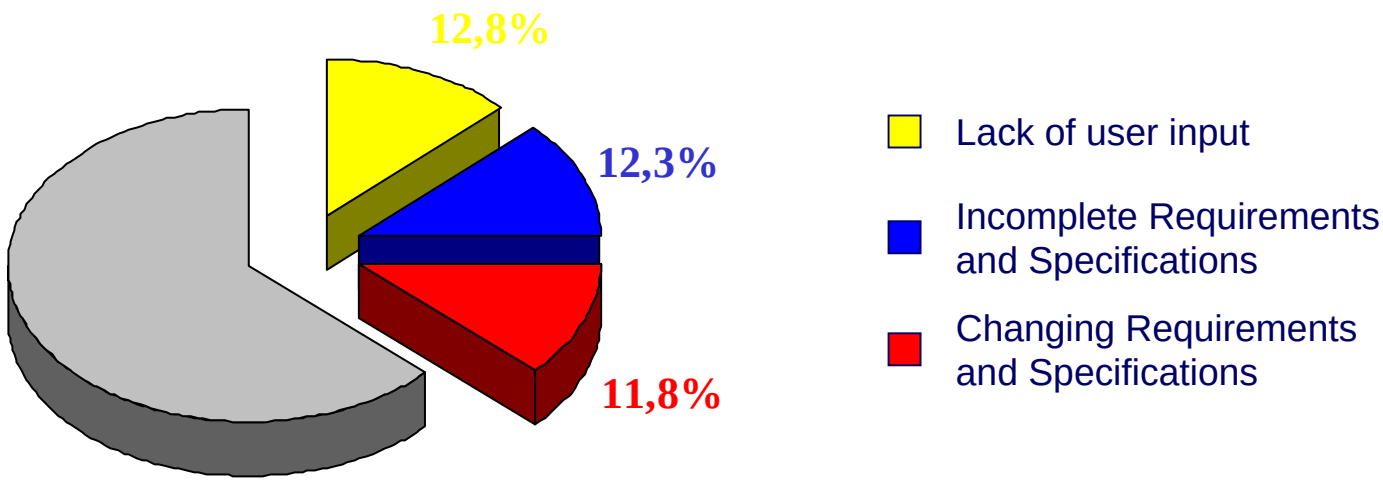
A light and powerful solution for requirements traceability

Why use Requirements Traceability?

31% of all software projects are canceled before completed,

50% of projects cost over 190% of the original estimate,

9% on time and on budget (large companies)
16% on time and on budget (small companies),



Source : "CHAOS Surveys and Reports" - The Standish Group - www.standishgroup.com

Reqtify : Easy to integrate

A non-intrusive approach :

No modification of your development and configuration management process.

Traceability during the whole process
(text tools, analysis and modelling tools, code,…)

Qualified DO178-B as a verification tool for A380, complies with D0254 and other standards.

Simple user interface allowing powerful navigation in the traceability graph

Reqtify can be used even on projects already started !

Reqtify : Immediate ROI

A minimal investment :

Easy to handle, very short training course,

No need for database administration,

A floating licence,

Windows / Unix interoperability

A small investment in Reqtify and training can provide a truly extraordinary payback even on the first project.

Stood

- **The AADL semantics**
  (+ textual notation **)**
- **The HOOD design process,**
  (+ semantics, graphical & textual notations **)**
- **The UML 2.0 standard graphical notation**

Stood Features Summary (1)

"Good" Software Engineering practices:

- well defined architectural & detailed design process (HOOD)
- model-based engineering (designing before coding)
- requirements traceability management
- documentation framework
- complying with standards: DO-178; ECSS-E40; AADL; UML 2.0;

Managing the complexity:

- designing in the large:
  - hierarchical decomposition
  - components management
- distributed development:
  - modularity - interfaces
  - multi-users
- mixed paradigms:
  - function oriented
  - object oriented
  - task oriented

Modeling real-time:

- reaching deadlines:
  - mastering control flows
- no loss of data:
  - mastering data flows
- predefined HRT components
  - cyclic - sporadic -protected
- supporting RT executives

Stood Features Summary (2)

Supported platform:

- Solaris, Hpux, Aix, Linux, Windows
- Full Unix/Windows interoperability

Versions:

- Current version: v 4.3
- End 2003: v 5.0
- Full upwards compatibility

Documentation generators:

- PostScript
- HTML
- RTF (Word)
- MIF (FrameMaker)
- TPS (Interleaf)

Code generators:

- Ada 95
- Ada Ravenscar
- C with RTOS
- C++
- AADL

Code reverse engineering:

- Ada
- C
- AADL

Interchange:

- SIF (CP HOOD)
- XML/CASEML

STOOD Release 5

- **UML 2.0 analysis front end**
- **New advanced GUI**
- **Support for AADL**

Who uses STOOD/ Reqtify ?

- **AIRBUS** for A340 and A380 software and avionics
  Corporate agreement including subcontractors
- **THALES**
  Corporate agreement including subcontractors
- **MBDA** for missile software developments
- **ALCATEL Space** for Satellite ground projects
- **EUROCOPTER** for the TIGER helicopter
- **CNES** (French space agency) for Satellite projects

Thank you