



RISPECT

Risk-Based Expert System for
Through – Life Ship Structural Inspection,
Maintenance and
New-Build Ship Structural Design

Nov. 2008 till Oct. 2011

Thematic Priority: Transport
Call: FP7-SST-2007-RTD-1 Sustainable Surface Transport
Topic: SST.2007.5.1.2. & SST.2007.5.1.1.
Instrument: Collaboration Project



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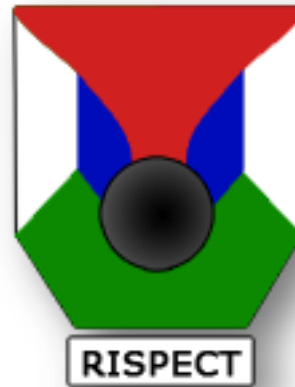
Aim of project

To intelligently use inspection results to improve safety of ships through better inspection and design

also...

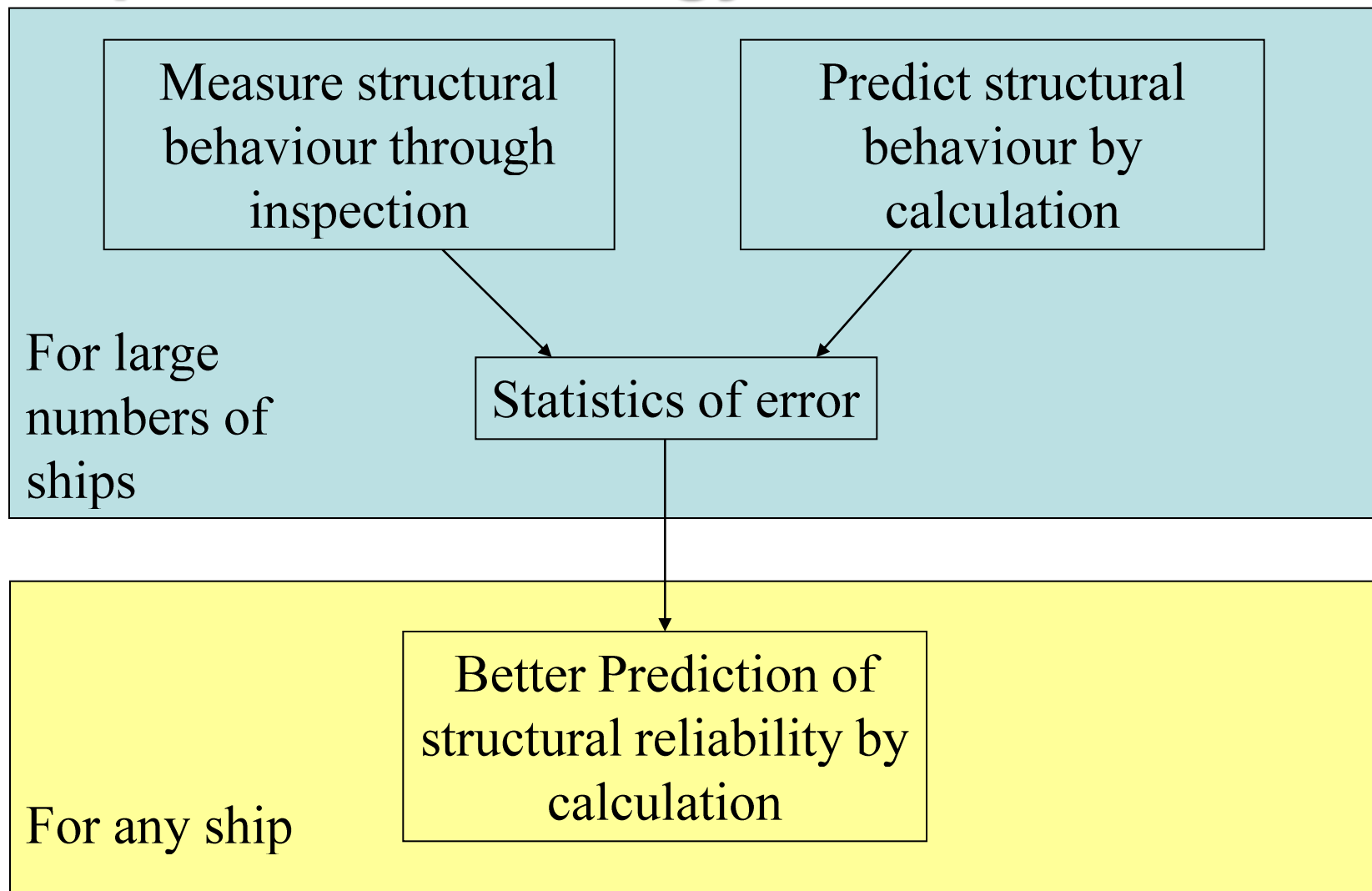
To improve communications between different parties involved in a ship's structural safety

Partners





Rispect Methodology

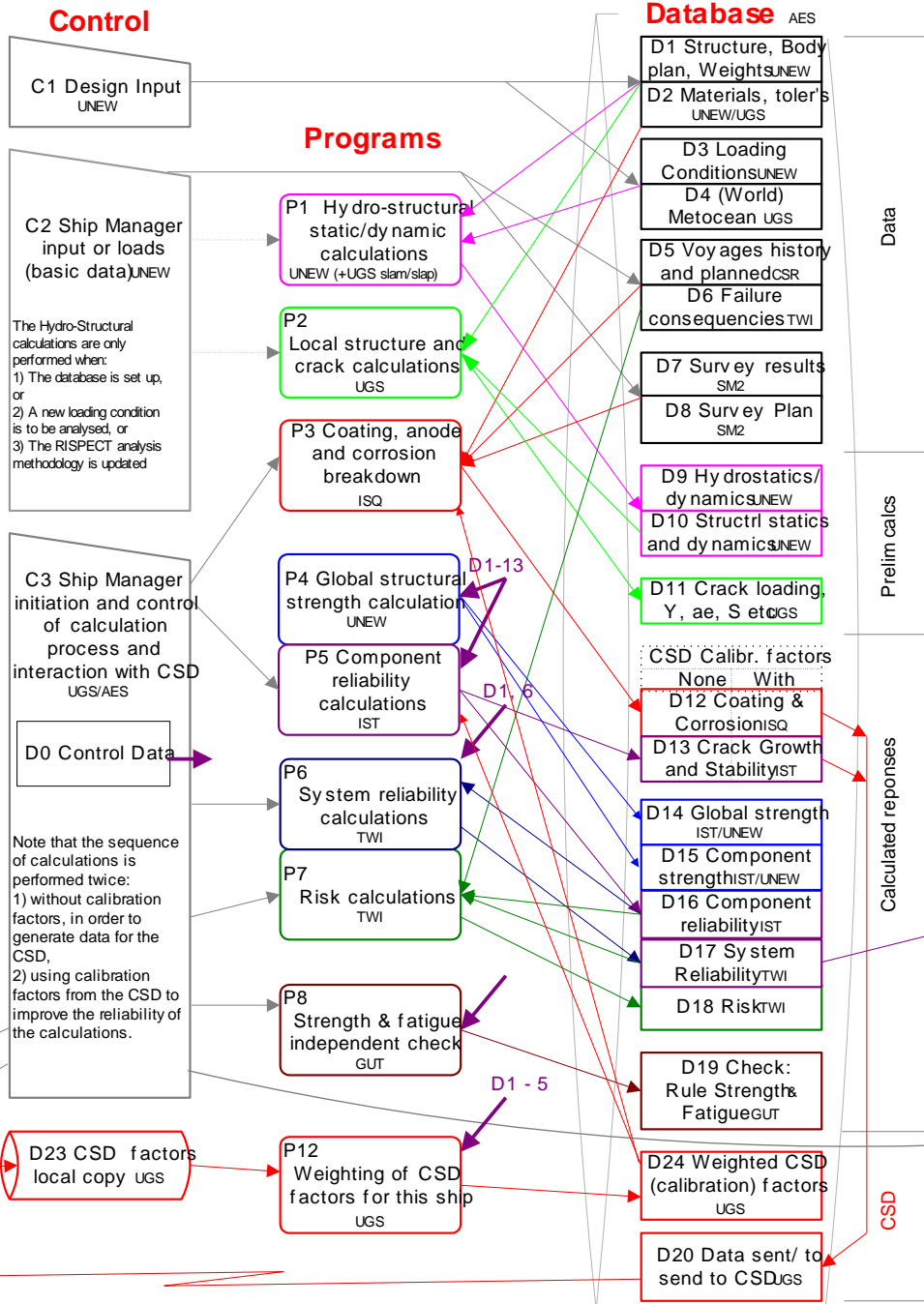


RISPECT - V2 - r3 ENGINEERING CALCULATIONS

Notes: 1) The remote CSD contains data for all ships and is controlled by the CSD manager

2) Remainder of system, as shown, applies to one ship and is under the control of the Ship Manager.

3) D0 Control Data is shown with C3 but will be part of the database, so the programs will be started by C3 but will refer to D0 for information defining the calculations they are to perform.



Revisions Version 1
 r2: 25 October 2009
 C2 instead of C3 initiates A3
 April 2010
 r3: CSD updated to include separate raw-data

Version 2 June 2010
 r1: Strength calculations performed within structural reliability calculation (previously strength and sensitivities pre-calculated). Numbering changed. Diagram reflected. Reports added

r2: 14 July 2010
 D0 Control data added within C3
 Numbering changed
 program codes changed from A to P

r3 18 July 2010
 CSD layout and numbering changed
 P21: Fleet reliability added
 P3 'anode' added

Raw data from other ships: same fleet and other fleets

Control of interaction with CSD

Note that the sequence of calculations is performed twice:
 1) without calibration factors, in order to generate data for the CSD,
 2) using calibration factors from the CSD to improve the reliability of the calculations.

Printer output from each program
 This is for obtaining a detailed understanding of the results. The information produced by the reporting programs should usually be sufficient for the ship manager

System reliability from other ships in fleet

Reports for:
 Manager
 Owner
 Inspectors
 Ship yard
 Class
 Flag
 Port state

Universities of Glasgow and Strathclyde
Statistical database, Fracture, Environment

Atlantec Enterprise Solutions
Data base technology

Bureau Veritas:
Link to Class society database

CONS.A.R
Link to shipping companies & Dissemination

Gdansk University of Technology
Independent checking software

Instituto de Soldadura e Qualidade
Corrosion modelling

Instituto Superior Tecnico
Component reliability model

University of Newcastle
Structural analysis

Shipbuilders and Shiprepairers Association
Link to shiprepairers & Audit

TWI
System reliability & Risk analysis

SE.MA2
Link to inspection company



BUREAU
VERITAS



CONS.A.R.



UNIWERSYTET GDANSKI



INSTITUTO
SUPERIOR
TECNICO



Newcastle
University

SSA Shipbuilders & Shiprepairers
Association



End