Marine Data Flow

A proposal for
Data Supply Chain Certification

Presented at CHRIS 20 (3 October 2008), Niteroi
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Exxon Valdez

Exxon Valdez Oil Spill Trustee Council

The safety of oil transportation demands review and overhaul. Not just new technology, but new institutions and new attitudes in old institutions are required.

(Alaska Oil Spill Commission – Final Report
"SPILL - The wreck of Exxon Valdez")

Exxon Valdez

Exxon Valdez Oil Spill Trustee Council

AP Associated Press

If Aviation would be as Shipping:

1.5 airliner disasters - every single day, or 550 per year

Loss of 82,500 human lives per year

(Alaska Oil Spill Commission - Final Report - "SPILL - The wreck of Exxon Valdez")

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AP Associated Press

Technological and human systems aren't perfect: Airliners occasionally do crash. But we have built a system that does not tolerate in air traffic anything like the catastrophic failure rate we can expect in the Valdez tanker trade. Because of that system, air travel can be considered safe and reliable.

Risk cannot be eliminated, but it can be reduced - if we accept the costs involved.

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(Alaska Oil Spill Commission - Final Report - "SPILL - The wreck of Exxon Valdez")

Overview

- About RTCA

- Data Supply Chain Certification (DSCC)

- Marine Data Supply Chain Concepts

- Conclusion

- Proposal for Data Supply Chain Certification

About RTCA

- Formerly:
  - The Radio Technical Commission for Aeronautics
- Today:
  - Focus on operations concepts, requirements and benefits
  - Facilitate operational enhancements

RTCA - Mission

- Develop consensus on Communications, Navigation & Surveillance /Air Traffic Management (CNS/ATM) issues.

- Strive for global interoperability.

- Take an "integrated systems" approach.

- Provide recommendations.

RTCA - Organizational Structure

- ## Corporate Governance
  - Policy Board, Board of Directors

- ## Committee Management
  - Program Management Committee
  - Multiple Special Committees

- ## Members
  - 400 organizations:- 8 governmental, 249 industrial, 124 international, 19 academic

Data Supply Chain Certification

Concepts of certifying the data supply chain

WEND Principle

__A Member State responsible for any subsequent integration of a country's data into a wider service is responsible for validating the results of that integration (2.9)__

A Quality Management System should be considered to assure high quality of ENC services (3.1)

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DSCC - Aspects

- Approval of the methods used to process or manipulate data.

- Minimum standard for all phases of the data process applicable to the processing of maritime data, including quality assurance and quality management.

Certification Levels

- Data quality level

- Data security level

- Supplementary Data level

DSCC - Components

1. Accuracy

2. Resolution

3. Assurance Level

4. Traceability

5. Timeliness

6. Completeness

7. Format

DSCC- Advantages

- Provides end user with assurance

- Supports the development of maritime databases.

- Ensures data quality

- Supports the data originator's responsibilities.

- Supports clear liability definition

- Supports open cooperation

- Absorbs inconsistency

DSCC - Risks for not having

- Based on the "equal treatment" principle, HOs may not be biased against resellers with questionable quality system.
- HOs may be exposed to increased liability
- Data could be altered inwardly
- Important data may be omitted in final product
- Updates may not be send to all users
- Datasets may be corrupted
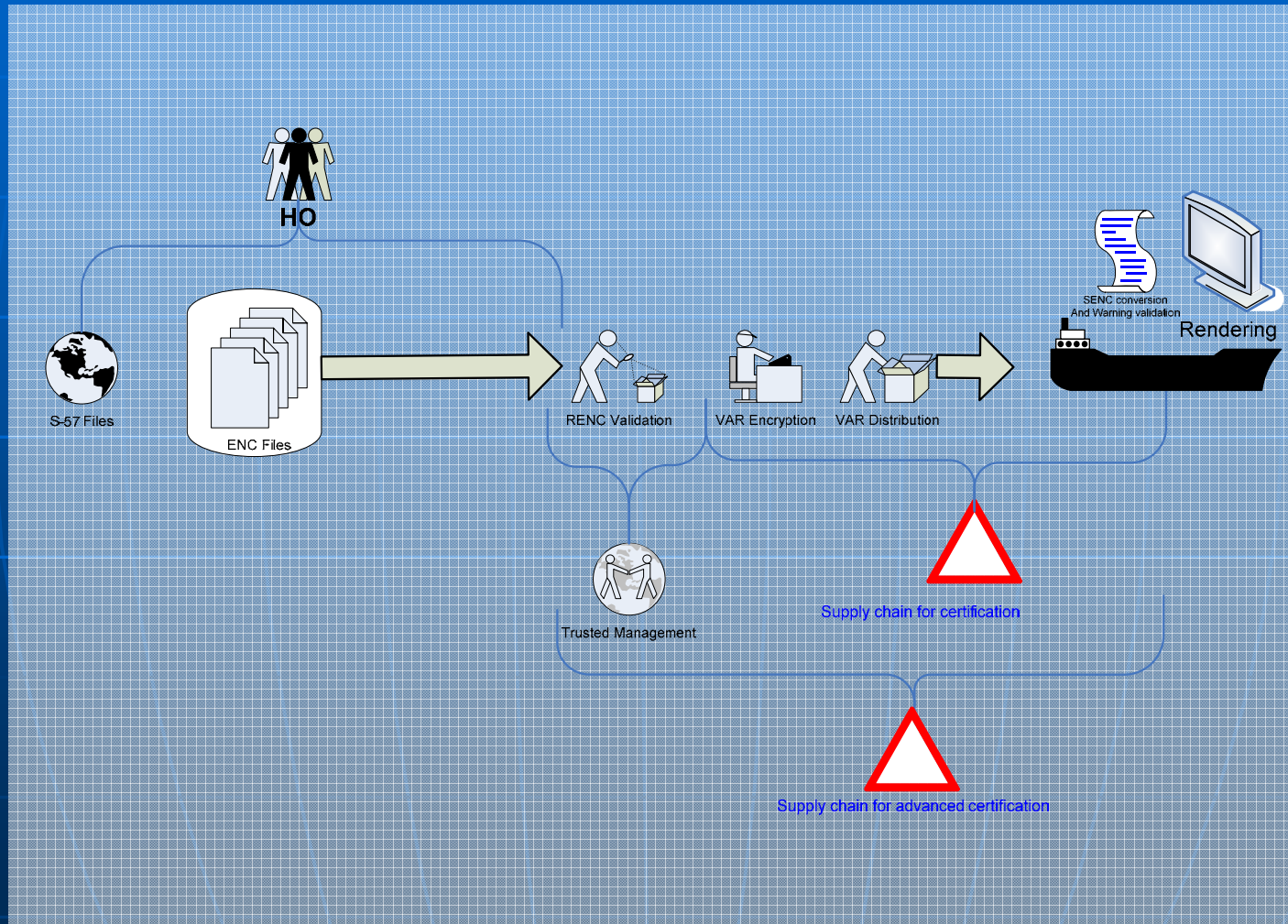- Media may fail to load

Marine Data Supply Chain Concepts

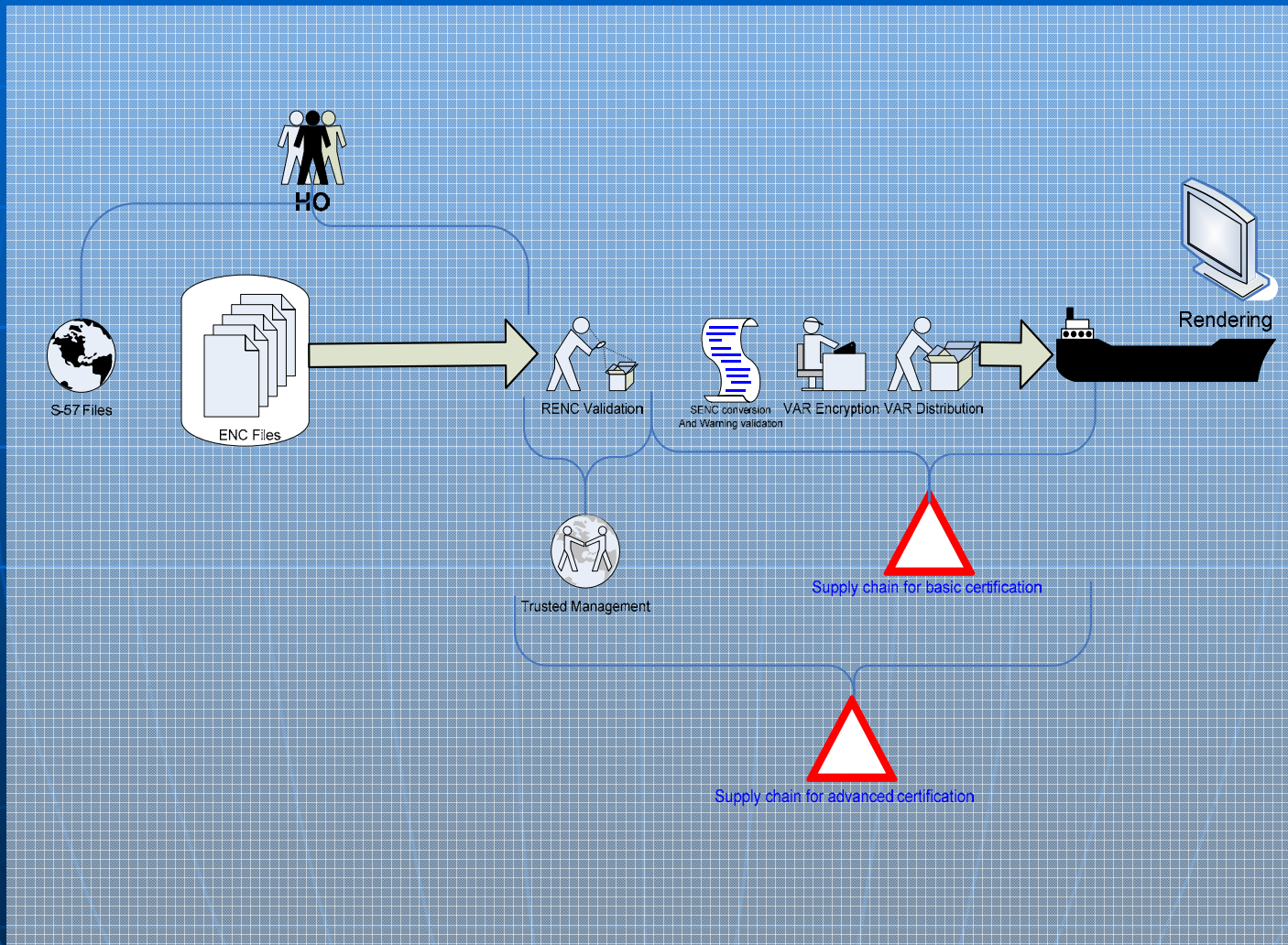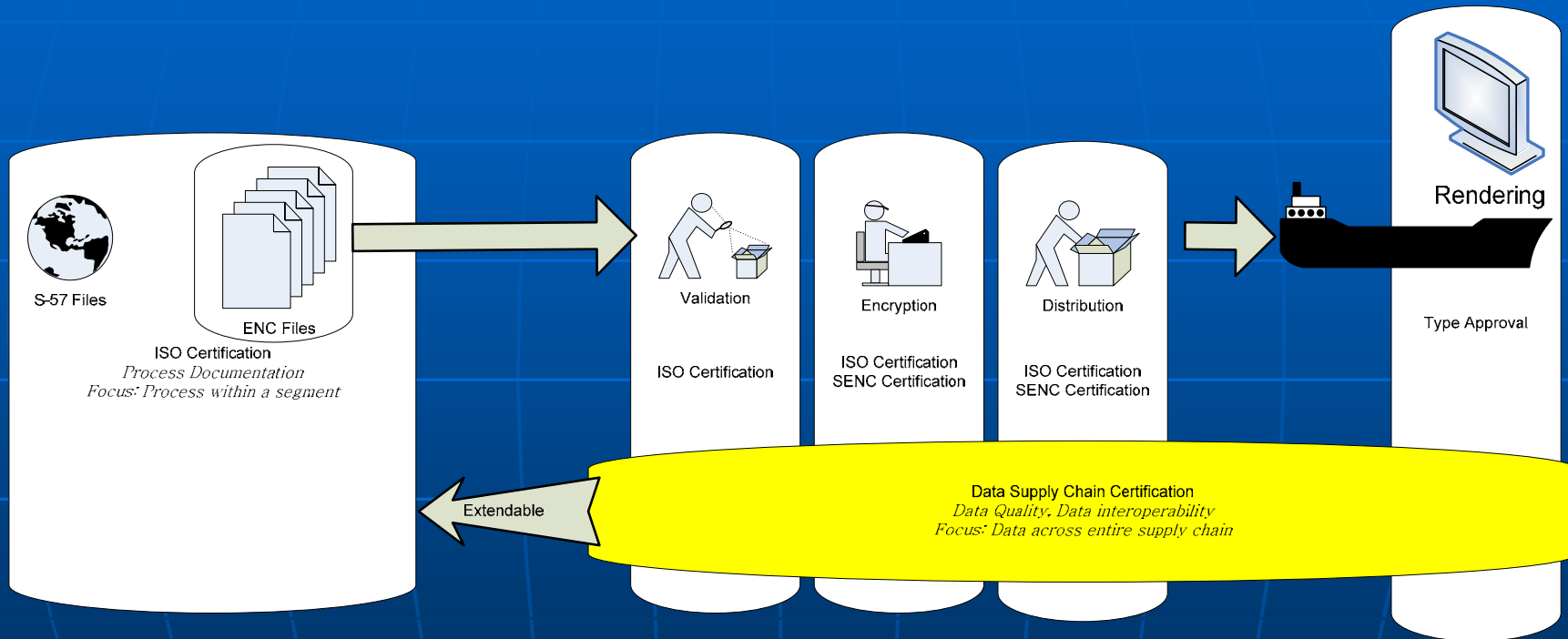## High level concepts for data delivery

Restricted HO-Supply Chain
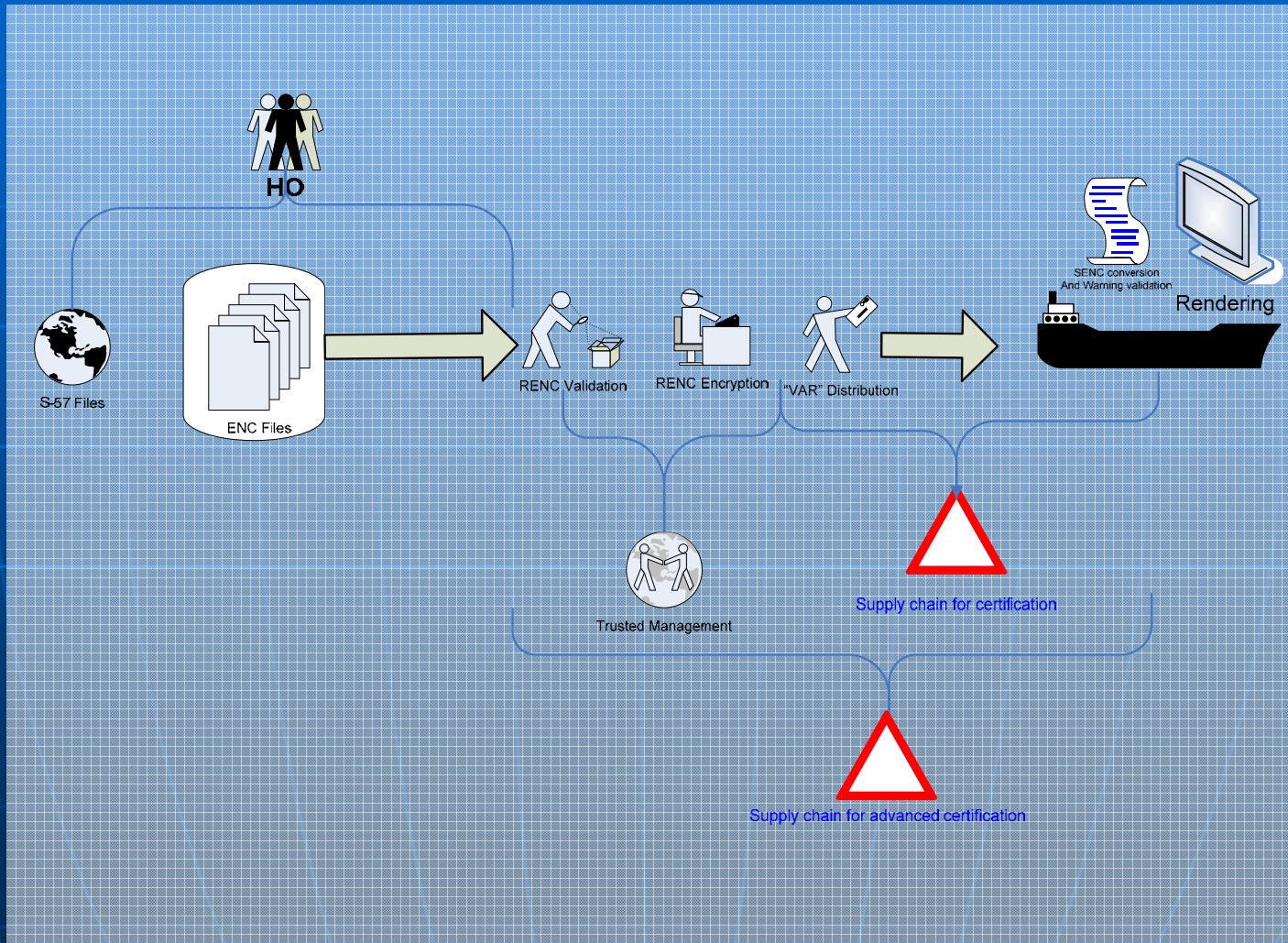
VAR-Encryption Supply Chain

SENC Supply Chain

ISO versus DSCC

Conclusion

- WEND principle is not being questioned - rather it is being supplemented.

- Current system has an inherent weakness in that it is based largely on trust.

- Now might be the time to consider adding Data Supply Chain Certification to the well-established standards for electronic navigational data exchange

Proposal – CHRIS is asked to:-

1. Note the efforts put forward by RTCA on the "Data Chain Certification" initiative

2. Give support for further research on this initiative and extend an invitation to interested Committee members to participate in a inter-sessional Correspondence Group

3. Permit the presenter to provide the Committee with progress reports at future meetings

Thank you!