

# TENIX DEFENCE



## How Melbourne is contributing to the contracts standards effort

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# Overview

- ◆ **Some background**
- ◆ **Why do we need “paperless contracting”?**
  - Tenix and the defence/project mgmt industry
  - Personal
- ◆ **International efforts**
- ◆ **Why Melbourne leads the world**
  - Background and motivation
  - Capabilities
- ◆ **The RACE Online project**
  - Scope
  - Aims



**Issues:**

**Why is Legal XML for Contracts important for Tenix?**



# Some background on Tenix

- ◆ **Tenix Group - \$A 1.2+ BN turnover, 5,000+ staff**
  - **Largest Australian Defence Contractor**
  - **Divisions (~ 10)**
    - **Naval and commercial ships (e.g., Tenix ANZAC Ship Project)**
    - **Land, air and electronic systems**
    - **Infrastructure & support**
  - **Products**
    - **Ships**
    - **Land vehicles**
    - **Electronics**
  - **Activities & Services**
    - **Project management**
    - **Systems design & integration**
    - **Documentation and training**
    - **Logistic & base support**



# ANZAC Ship Project



- ◆ **10 frigates (8 RAN, 2 RNZN)**
  - Total package
  - 15 year design/build cycle
  - 27 year+ design life
- ◆ **\$A 6 BN fixed price contract!**

*#5 commissioned 31 March 2001*



# Why are contracts important to me?

- ◆ **2 yrs commercial Documentation Coordinator**
  - Tried to manage subcontract flow down from precedents
  - Costs/delays from corrupt work, lost work, rework
  - Wasted opportunities to leverage knowledge: no one understood concepts
  
- ◆ **Logistics documentation systems specialist**
  - Contract analysis (understand delivery commitments)
  - Amendment (turn motherhood clauses into something we could deliver against, incorporate new technology)
  - Writing software and service contracts
  - Implementing state of the art authoring and content management incorporating lessons learned
  
- ◆ **When I moved to ILS my wife inherited the commercial documentation coordination role**

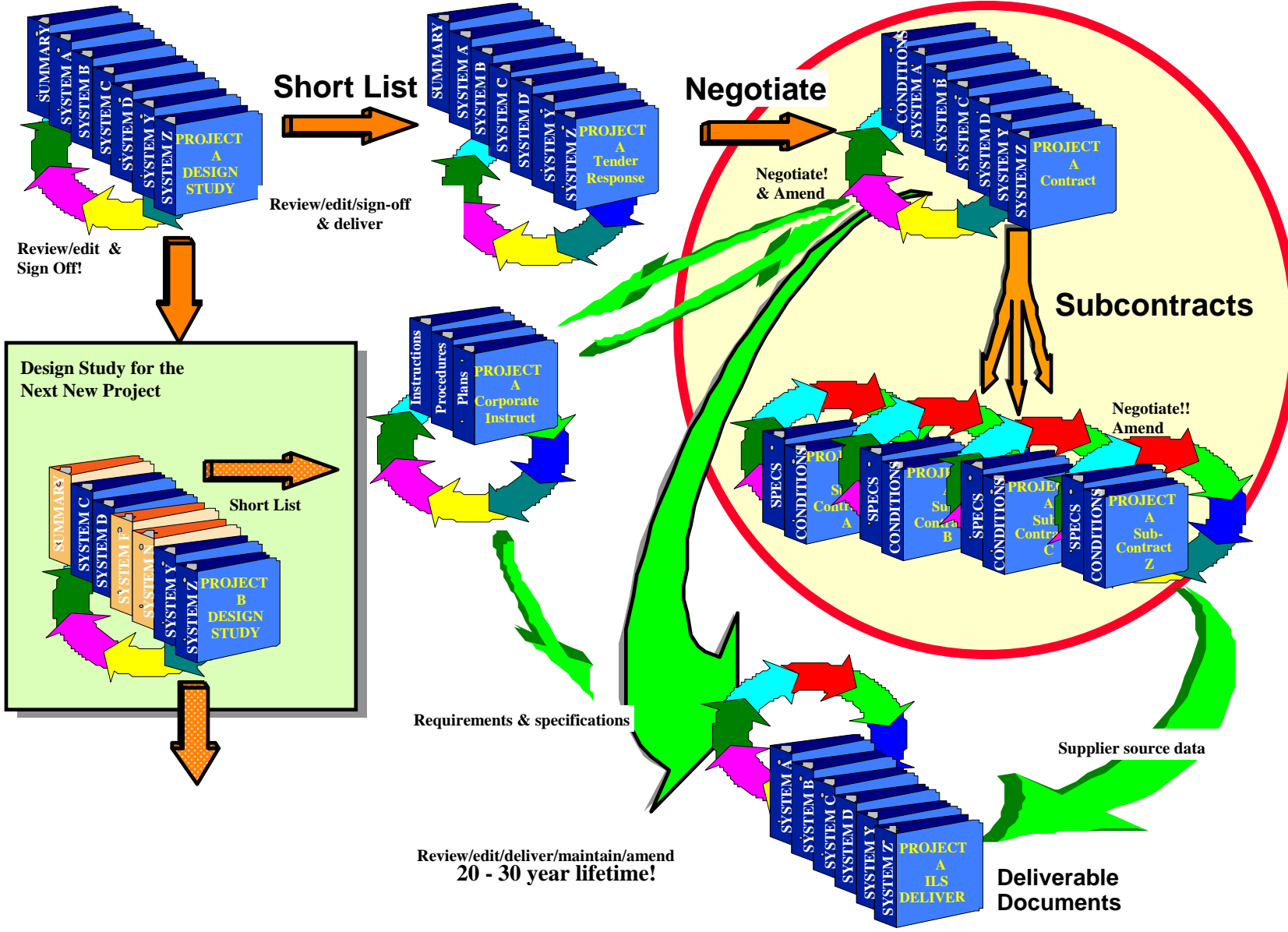


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**Managing contract  
related knowledge  
over the project  
lifecycle**



# Simplified doco cycle for a large project





# The central role for contracts

- ◆ **Client's RFT states capability requirements**
- ◆ **Bids/tenders**
  - Suppliers' proposals
  - Many bids to win one contract
- ◆ **Complex projects require a "virtual enterprise"**
  - Primes flow down obligations and requirements
  - Flowdown negotiations bigger than Client negotiation
- ◆ **Contracts are the agreed legal interfaces**
- ◆ **Tendering and contract admin costs are a significant part of overall project acquisition**
  - Costs subtracted from capability budget



# Contracts as a knowledge mgmt interface

- ◆ **Client requirements for a product should be distilled into content of a contract**
- ◆ **Most supplier activities relate back to satisfying the contractually specified requirements**
- ◆ **Essential management systems on both sides need to be tied into the interface**
- ◆ **Requirements for the interface**
  - **Correct**
  - **Available**
  - **Useable**
  - ***Faster***
  - ***Better***
  - ***Cheaper***



# Known Department of Defence issues

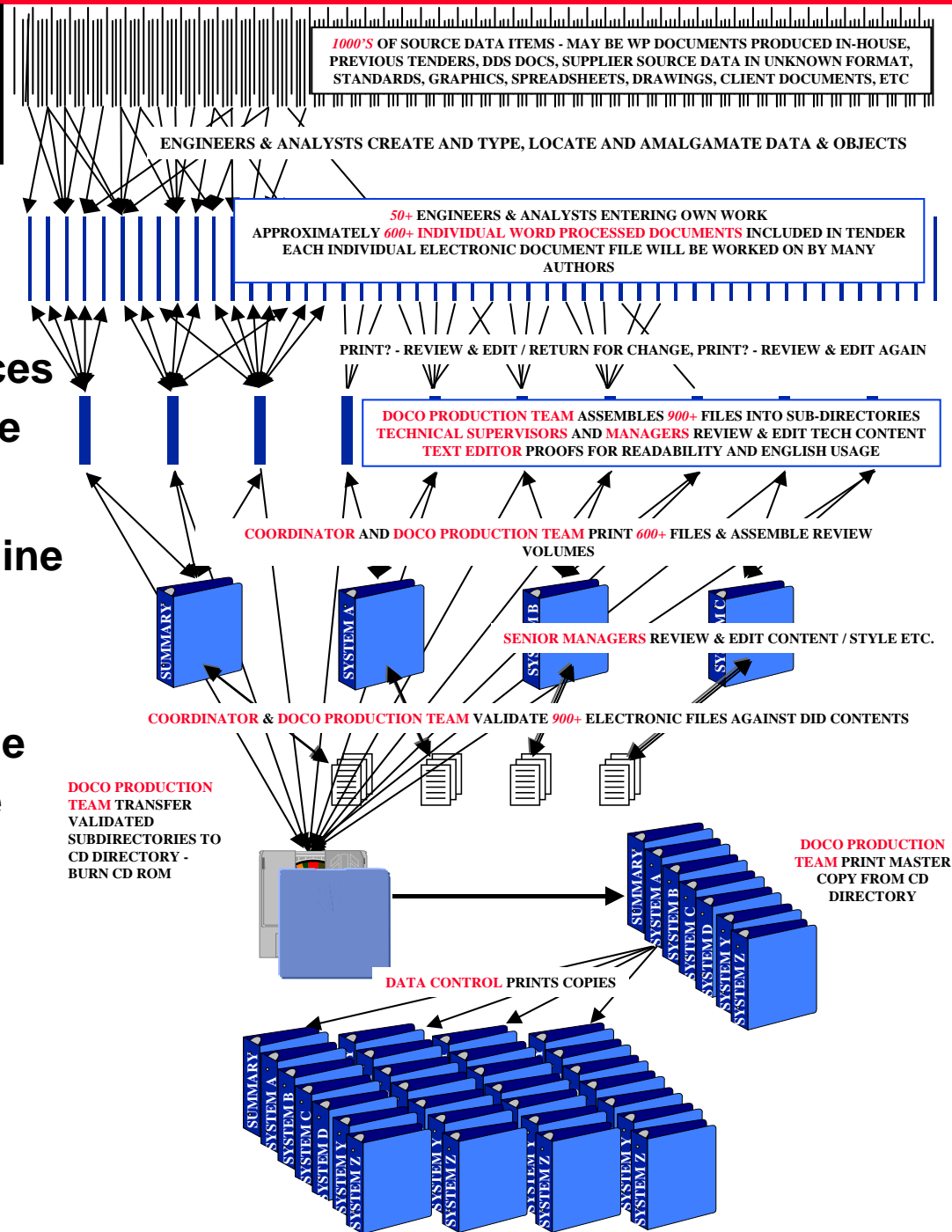
- ◆ **Australian National Audit Office Reports**
  - Jindalee Operational Radar Network Audit Report No.28, 18/06/1996 - <http://www.anao.gov.au/Web/wsPub.nsf/AuditReportByTheme/86BC064DE7D158F04A25690A002479D2>
  - New Submarine Project Audit Report No.34, tabled 24/03/1998 - <http://www.anao.gov.au/Web/wsPub.nsf/AuditReportByTheme/5DE86D19FAEF672A4A2569060003FAC7>
  - Management of Major Equipment Acquisition Projects Audit Report No.13, 11/10/1999 - <http://www.anao.gov.au/Web/wsPub.nsf/AuditReportByTheme/63BAD5F0473289024A256900000D4D46>
  - Amphibious Transport Ship Project Audit Report No.8, 07/09/2000 - <http://www.anao.gov.au/Web/wsPub.nsf/AuditReportByTheme/F154BF0971FB9BD5CA25695D008091FC>
- ◆ **McIntosh/Prescott Collins Class Sub report**
  - <http://www.minister.defence.gov.au/1999/collins.html>
- ◆ **Defence Efficiency Reform Program**
- ◆ **Australian Defence and Industry Strategic Policy Statement (1998)**
- ◆ **DAO ↗ DMO Reorganisation**



# Prime contractor production/mgmt issues

- ◆ **Effective contract management critical to business**
- ◆ **Prime contractor multiplies all process inefficiencies many times over!**
  - **Customer presents ideas, supplier must offer solutions**
  - **Tenders won must pay for all lost tenders (× 10)**
  - **One contract flows down to many subcontracts (× 100)**
  - **Comparatively unskilled authors (× 2)**
- ◆ ***Client pays for all suppliers' inefficiencies!***

# Streamline bidding documentation funnel



- ◆ Huge task
  - Uses production resources
  - Don't reinvent knowledge
- ◆ Conflicting views of time
  - Supplier: crushing deadline
  - Client: inordinate delay
- ◆ Word processing friction
  - multiplies task magnitude
  - wastes resources & time
  - major source of delay
- ◆ Delay generates crisis
  - disorientation
  - panic
  - error



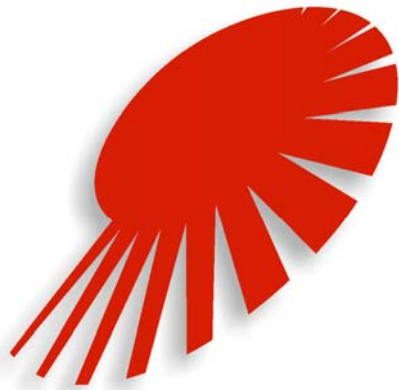
# Process improvement

- ◆ **Effective knowledge mgmt maximises efficiency**
- ◆ **Conceptual tools**
  - **Query and discovery**
  - **Structured/controlled authoring environment**
  - **Electronic routing**
    - review
    - approval
    - tracking and reporting
  - **Links to source data**
  - **Change management and tracking**
  - **Links to other business processes**
    - requirements analysis
    - awareness
  - **Establishment and reuse of precedents**



# Two paradigms: paper vs content

- ◆ **Paper: A physical object consisting of one or more sheets of paper covered with printing or writing**
  - Focus on form and style
  - Word processors provide total control over form and style
  - Onus is on the author to determine formats
  
- ◆ **Content: Sets of containers to capture and transmit knowledge for comprehension and action**
  - Focus on the content - form and style a by-product
  - Structured authoring
    - Select logical containers for knowledge
    - Enter the knowledge
  - Content management and processing
    - Semantically parsable markup
    - Can be “intelligently” processed by computers

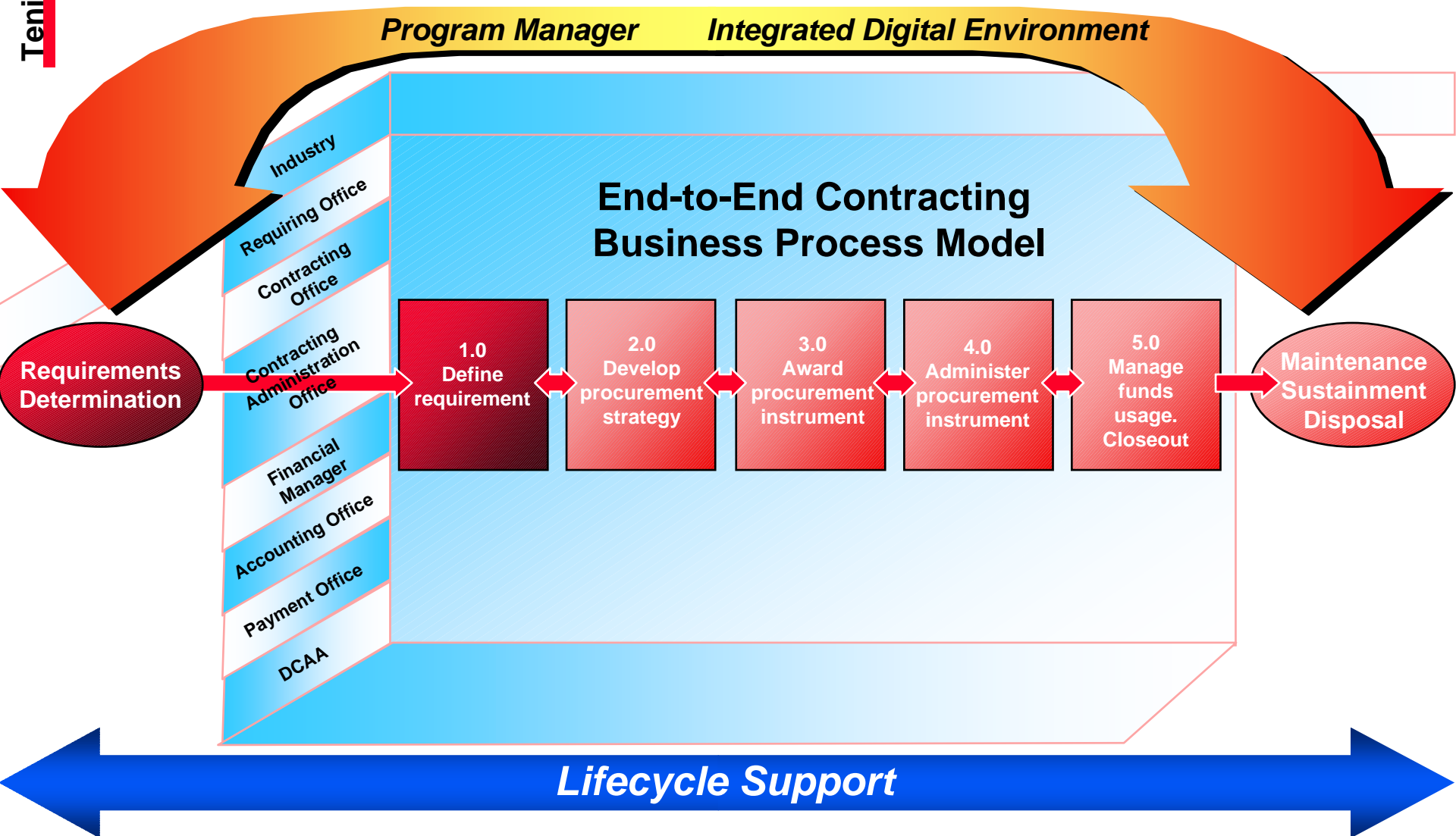


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**International efforts to  
implement paperless  
contracting**

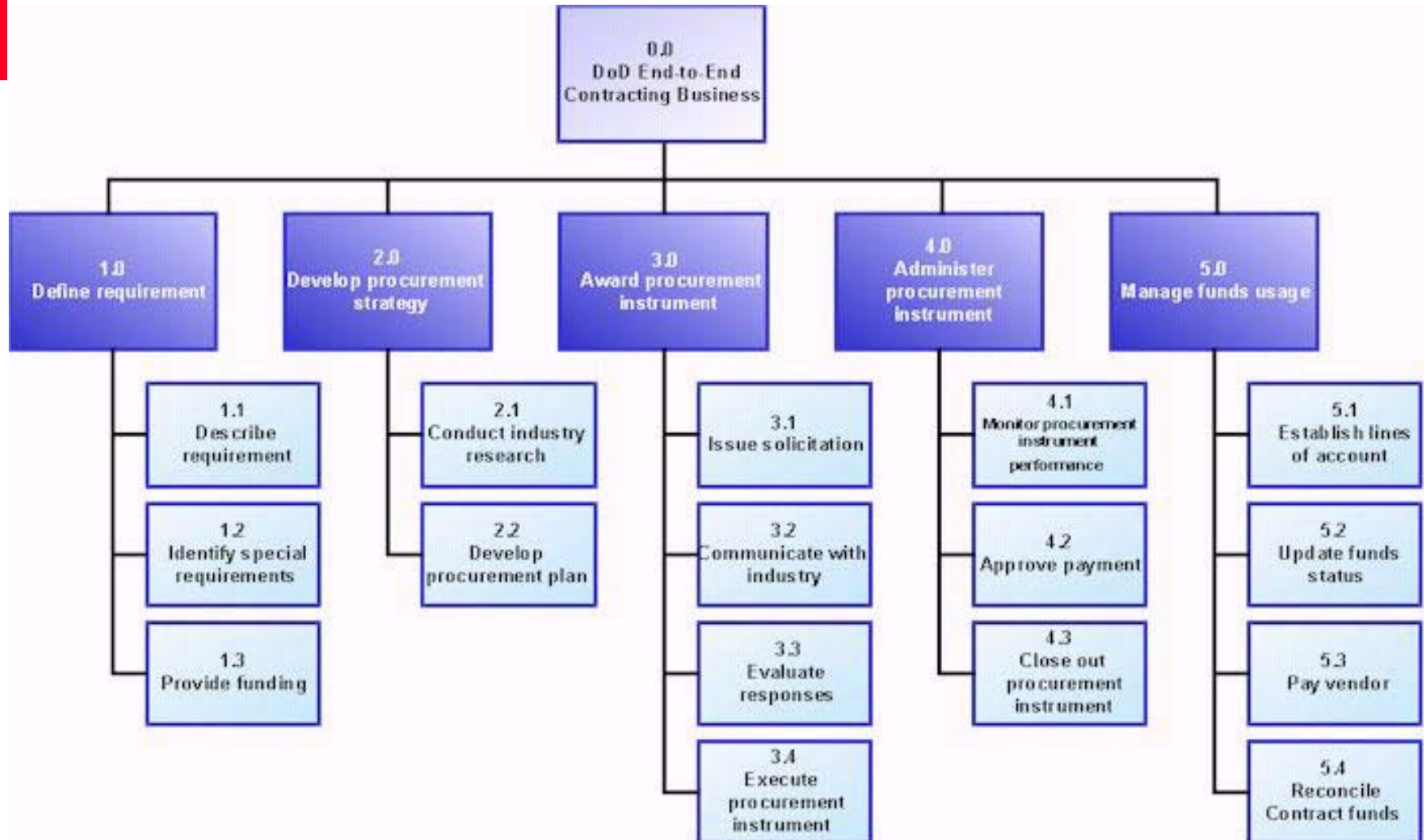


# US DoD paperless acquisition



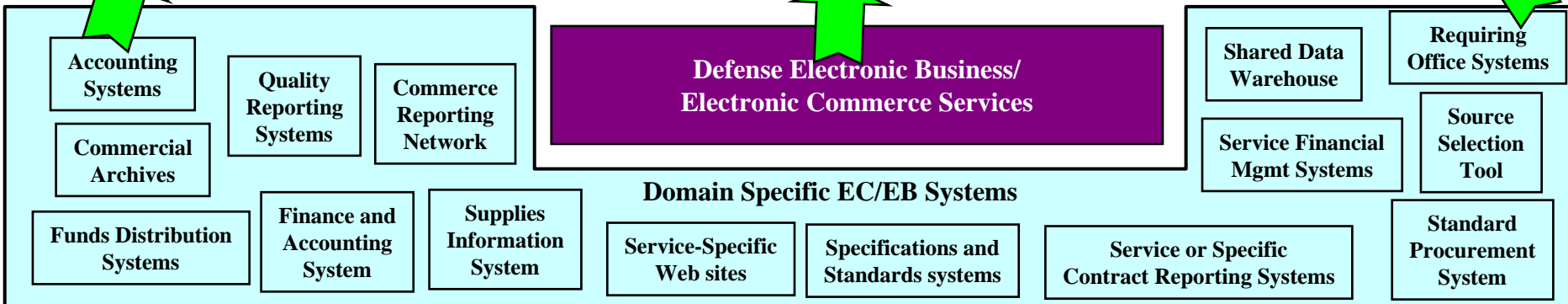
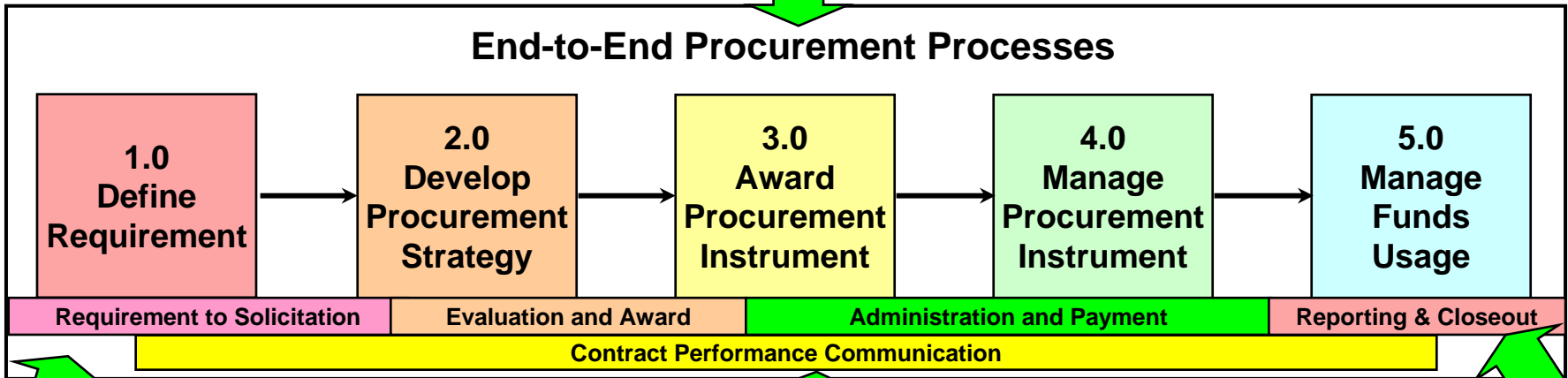
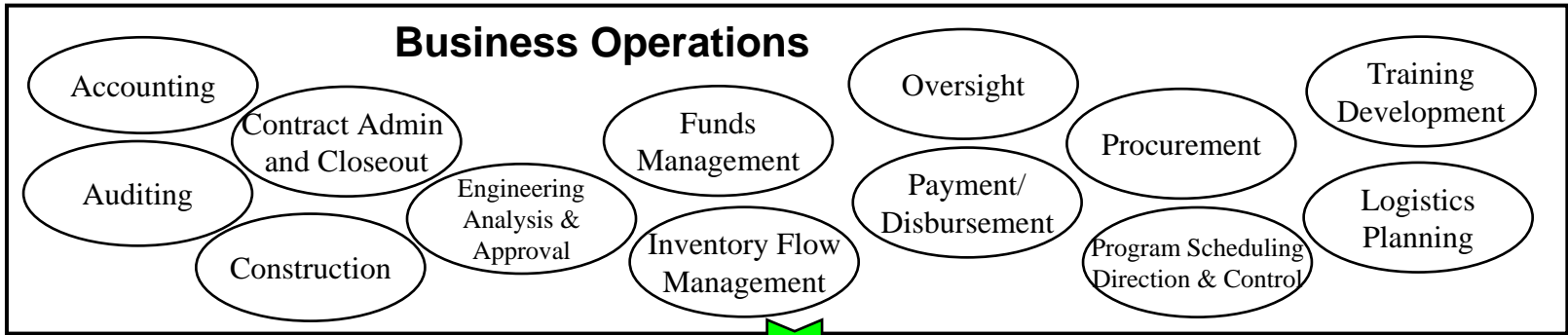


# Functional analysis





# What is involved in paperless contracting





# Bespoke solutions don't work

*Federal Computer Week, 19 March 2001: Falling short of the paperless standard - DOD buying system called flawed*  
by Bill Murray

American Management Systems Inc., Fairfax, Va., won the **\$326 million SPS contract in 1997** and helped DOD replace 76 contracting programs. The company and DOD have joined to produce a Microsoft Corp. Windows-based system that is based on AMS' Procurement Desktop product.

But the I[nspector] G[eneral's] report said SPS is flawed, in part, because DCMA insisted on using Procurement Desktop as a basic platform even though the product only met 45 percent of DOD's requirements.

The estimated costs for SPS software and support services have shot up to \$433.5 million, and **estimated life cycle costs for SPS from fiscal 1995 to 2005 are \$3.7 billion**, according to the IG. **SPS should provide DOD with \$1.4 billion via increased productivity and reduced costs**, according to the report, which was requested by Rep. Jim Nussle (R-Iowa), House Budget Committee chairman.



# XML-based contracting initiatives

◆ **Frontline Solutions for XML In Defence Procurement** (<http://www.frntln.com/index.htm>)



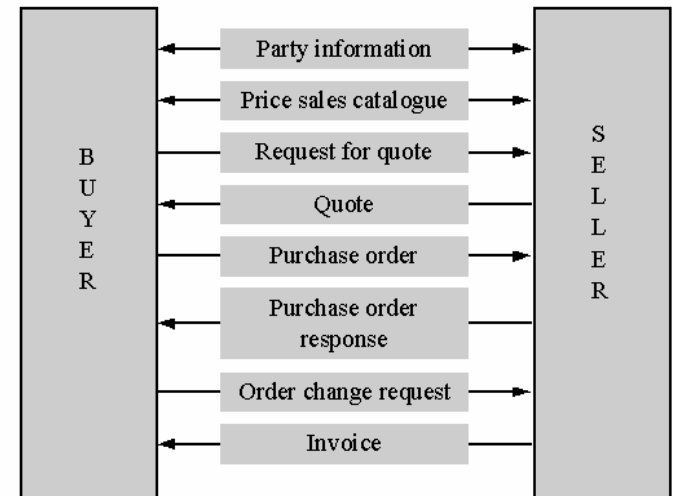
- EZ-RFP for USAF
- XML authoring for RFP's but no published standards
- Summary paper: XML in Defense Procurement (<http://www.infloom.com/gcaconfs/WEB/chicago98/harshbarger.HTM>)

◆ **ebXML** (<http://www.ebxml.org/>)

◆ **UN/CEFACT** (<http://www.unece.org/cefact/>)

- Legal Working Group
- UN/EDIFACT (<http://www.edifact-wg.org/>)

◆ **LegalXML Organisation** (<http://www.legalxml.org/>)





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**Melbourne's World  
Leaders**



# Tenix Defence

- ◆ **Australia's largest defence prime contractor**
  - **Manages/subcontracts single project virtual enterprises**
  - **Small enough to be a centre of excellence, not islands of competence**
  - **Seeking generic solutions not just quick fixes**
  - **Committed to locally based R&D**
- ◆ **Committed to implement state of the art content management systems**
  - **1988 R&D project focussed on content mgmt technologies**
  - **RMIT's Structured Information Manager (SIM)**
  - **DOORS requirements management**
  - **STEP "Spider" project**
  - **SpeedLegal SmartPrecedent management system**
  - **Configuration management issues**



# Manufacturing Systems and Automation

- ◆ **Located within CSIRO Manufacturing Science and Technology (CMST), Preston, Vic.**
- ◆ **Relevant relationships**
  - **CRC for Intelligent Manufacturing Systems and Technologies**
- ◆ **Relevant R&D projects**
  - **Globeman 21- Enterprise Integration for Global Manufacturing for the 21st Century**  
(<http://ims.toyo-eng.co.jp/Index2.htm>)
  - **Globemen - Global Engineering and Manufacturing in Enterprise Networks** (<http://cic.vtt.fi/projects/globemen/public.html>)
  - **Global concurrent engineering**
  - **Development of business processes and technologies for single project virtual enterprises**
  - **Bidding Workbench**



# Multimedia Database Systems

## ◆ Relevant relationships

- LegalXML (Legislation and Contracts WGs)
- World Wide Web Consortium (W3C)

## ◆ Relevant research projects

- Fundamental research into indexing and managing multi-gigabyte databases (<http://www.mds.rmit.edu.au/mg/>)

## ◆ Structured Information Manager (<http://www.simdb.com/>)



- World class native XML database engine
- World class Web server, document management services
- World class application development technology

## ◆ Significant clients

- Management & delivery of legislation (<http://www.thelaw.tas.gov.au/>)
- Defence security agencies in US and Australia
- ATO Legal Database (<http://law.ato.gov.au/atolaw/index.htm>)



# SpeedLegal Pty Ltd

- ◆ **Independent legal software developer, Queen St., Melbourne**
- ◆ **Significant relationships**
  - **Legal XML Contracts WG**
  - **CCH Australia/Wolters Kluwer Pacific**
- ◆ **SmartPrecedent**
  - **XML based precedent management and intelligent authoring system**
  - **Round trip between XML and RTF**
  - **Based on a DTD for the structural hierarchy of contractual documents**



# Australian Industry Defence Network

- ◆ **Industry assoc. for small and medium enterprises contracting to Defence and defence primes**
  - Supported by Department of Defence and state development organisations
  - ~700 members
  - Works to reduce cost and effort to bid for defence work
- ◆ **eCommerce Committee**
  - eCommerce standards development and testing
  - Process improvement using Web technologies
  - Education and outreach
- ◆ **Greatest strength located in Victoria**
  - President
  - eCommerce committee membership



# Other players

- ◆ **Defence Materiel Organisation**
  - Contracting Policy and Operations (direction)
  - Business Information Systems (technology policy)
  - Defence eProcurement Directorate (oversight and contact)
  - Materiel Reform (Smart 2000 precedents development)
- ◆ **Distributed Systems Technology Centre**
  - Hosts Australian W3C office
  - Centre for ebXML work in Australia
  - Knowledge and resource management
  - B2B processes and work practice support
- ◆ **Legal XML/Contracts**
  - Commitment to “open source” publication of findings
  - Clearinghouse for world knowledge on XML for contracts



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# Historical development of the RACE Online Project



## May 1998 Tenix/Defence Meeting in Canberra

- ◆ **Hoped to set non-proprietary standards for data exchange**
  - **Invigorate CALS and enforce compliance**
  - **Provide consistent project management infrastructure**
  - **Interchange standards for all stages of project lifecycle**
- ◆ **Two tiers of compliance**
  - **Lower level for small projects/suppliers**
    - **System of templates available for free via Web (**Smart 2000**)**
    - **Word processed documents produced under templates should be convertible to SGML (XML) by the large players**
  - **Higher level for primes and major projects**
    - **SGML (XML) interchange standards able to support content management applications**

Small players may exchange documents with any large player using the word processing standard. Large players should have the capacity to readily convert between the word processed format and the corresponding format under DTD control.

- ◆ **Killed by Defence Efficiency Reform and staff rotations**

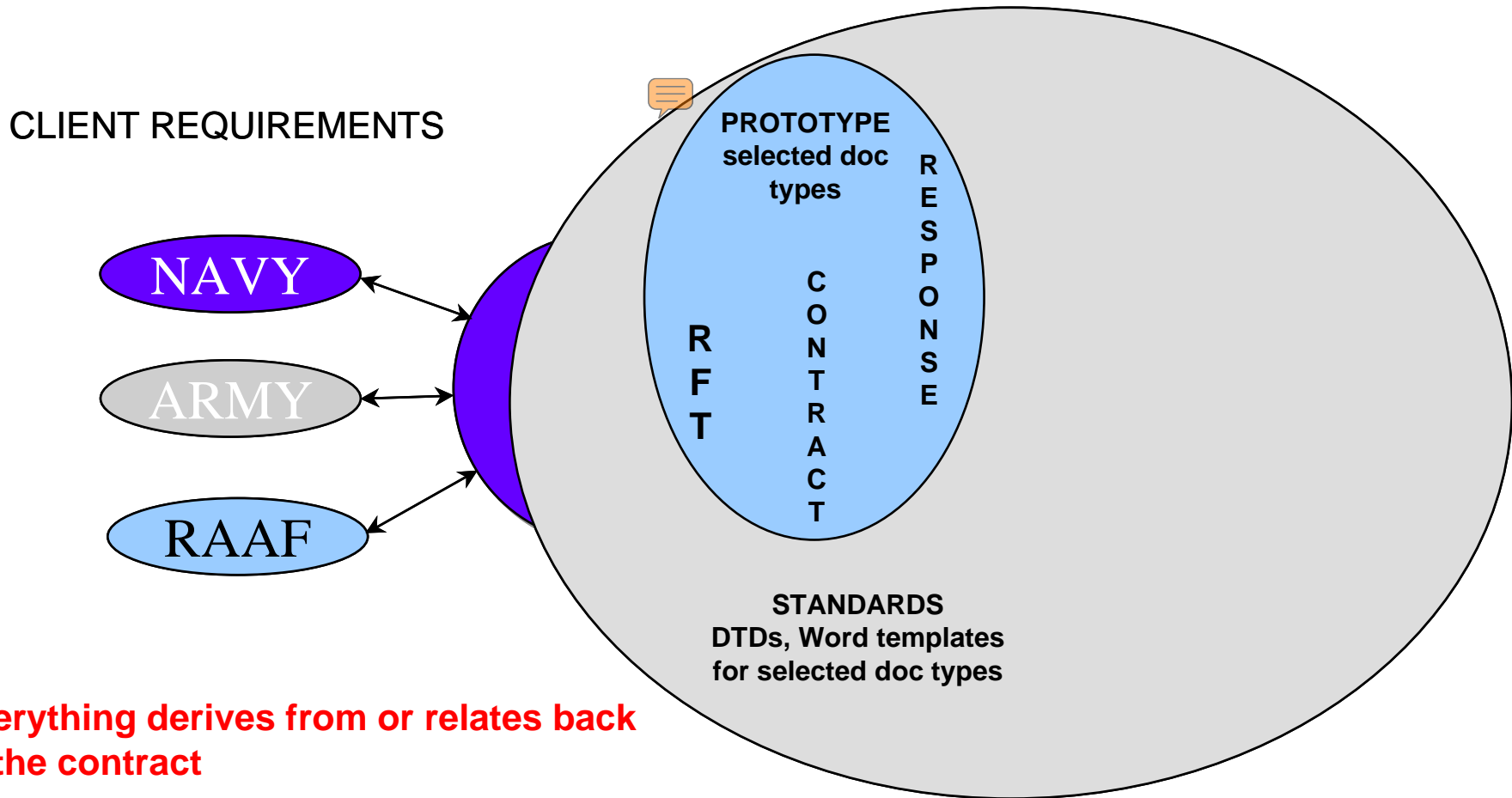


## Second half 1999

- ◆ **Tenix began implementing RMIT's SIM**
  - Targeted ANZAC Frigate maintenance procedures
  - Prototyped many of the source data and change management capabilities needed for bids and contracts
- ◆ **Drafted a Capability Technology Demonstrator Proposal with CSIRO help**
- ◆ **Explored joint research proposals with RMIT**
- ◆ **Conditions still not suitable to start work on legal documents**
  - Some technology still required development (costly)
  - Continued difficulties identifying Defence contacts
  - Tenix management still wasn't committed



## Structural concept





# Late 2000 - threads coming together

- ◆ **ebXML (electronic business XML)**
  - Encapsulates transactions and captures assoc. metadata
  - Does not deal with the content of tenders and contracts
- ◆ **AIDN's Spider Project for STEP**
  - Project to demonstrate STandards for the Exchange of Product information (PDM)
  - Established eCommerce Committee
- ◆ **Developing involvement in LegalXML.org**
  - Focus on documents not transactions
  - Open source community
  - Worldwide involvement
  - Australia and Melbourne heavily involved



# Enablers for the demonstration project

- ◆ **DMO released Smart 2000 precedents**
  - Standardised and documented structure of major RFT and contract documents <http://www.dmo.defence.gov.au/lcd/smart2000/smart2000.cfm>
  - Based on controlled MS Word template
- ◆ **RMIT, SpeedLegal, Tenix and CSIRO all represented in LegalXML**
- ◆ **SpeedLegal's SmartPrecedent provided the missing component**
  - Database aware editing environment
  - DTD for the hierarchical structure of contracts
  - Easy round-trip between Smart 2000 and XML content
  - Illustrated concepts to Tenix contract engineers



# NOIE ITOL

- ◆ **National Office for the Information Economy**
  - **Estab. to help Australians create world-class online economy**
  - **Included former Office for Government Online**
- ◆ **NOIE Information Technology Online (ITOL) grants**
  - **“ITOL is designed to accelerate the national adoption of business-to-business (B2B) e-commerce solutions, especially by small to medium enterprises (SMEs), across a broad range of industry sectors and geographic regions.”**
  - **“NOIE defines e-commerce as the use of computers and electronic communications networks as a business tool, which can enhance business efficiency and effectiveness.”**
  - **Up to \$A 200,000 available in matching funds for suitable projects**



# RACE Online

## ◆ Project Plan

- **Determine content requirements for defence contracts**
  - Start with SMART 2000 contract template and guidelines
  - Interview DMO, prime contractors and AIDN sub-contractors
- **Publish a prioritised Requirements document listing bidding and contracting needs of the three parties**
- **Develop specification**
  - DTDs
  - Business requirements
- **Publicise for criticism and comment via LegalXML and other open source forums**
- **Implement a proof of concept/demonstration website**
  - Expose supporting software
  - Review and incorporate feedback
- **Demonstrate and train through the AIDN membership**



# Relationship to other initiatives

- ◆ **SMART 2000**
  - Start for SME integration into KM framework
  - Published and tested words
- ◆ **ebXML and UN/CEFACT**
  - Encodes transactions not content
  - Concern now focussed on content model
  - Role of DSTC consortium
- ◆ **LegalXML/Contracts**
  - Concerned with content models not transactions
  - Provides "open source" publication



## Way ahead

- ◆ **Whether the grant is won or lost the initiative needs to proceed**
- ◆ **We seek**
  - **Additional members who have something to contribute**
    - funding
    - technical capabilities
  - **Expressions of interest and support welcome**
  - **Critics and reviewers**