**Recommendation Report:**

# Business Process Analysis Tool
# [FC] Program

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# TABLE OF CONTENTS

# 1. EXECUTIVE SUMMARY

One of the core objectives of the [FC] Program is to design a Business Process and Information Architecture that provides a set of standardised core processes and information to support Case Management across all Courts & Tribunals.

Currently, the Department of Justice has no standard business process modelling tool. However, to date System Architect has appeared to be the preferred option. Taking into account the unique nature of the [FC] Program of work and the inability of System Architect to meet the Program's business and information needs, an evaluation of available modelling tools was undertaken.

Realising the need for the BPA tool to satisfy a number of functional and technical requirements, a rating and weighting matrix was considered the best approach. Evaluation criteria were established, divided into categories and assigned appropriate weightings of importance.

Candidate tools were identified for evaluation by researching case studies and market overviews. Information sourced included evaluation of vendors based on their ability to meet a broad range of modelling needs and performance in the areas of functional coverage, strategy, support and marketing. The vendors whose modelling tools were considered to be good performers under the established criteria were clearly identified.

Ten Business Process Modelling Tools were evaluated to reveal ARIS as the most suitable tool for the purpose of [FC] and the Department.

Overall, ARIS demonstrated its ability to successfully meet the [FC] Business and Information modelling needs. Therefore, it is recommended that the Department of Justice proceed to negotiate the following software licences:-

- ARIS Business Server on MS SQL Server;
- ARIS Business Designer 7.02; and
- ARIS Business Architect 7.02.

on the basis that …

# 2. INTRODUCTION

On 1 July 2007 the [FC] Program was established to deliver the shared vision of the Department, Judiciary and Courts' management to establish relevant, easy to use and innovative on-line services to litigants, their legal representatives and the broader community by improving registry operations generally through the use of new technology and process innovation. The business scope for the program incorporates the Supreme, District and Magistrates Courts of [State] and encompasses both the civil and criminal domain as well as the tribunals that are administered by these courts.

A core objective of the program is to design a standardised Business Process Architecture and an Information Architecture for Case Management across all [State] Courts & Tribunals and to implement this using a common technology framework. To achieve this, a review of current Case Management processes will be conducted, which involves the use of modelling software to:-

- document a shared understanding of current processes,
- facilitate analysis of these to identify improvement opportunities, and
- design a set of future state "to-be" models to document the new business requirements.

Currently, the Department has no standard for business process modelling software. However, System Architect has appeared to be the preferred option to date. In light of the unique nature of the [FC] Program of work and the inability of System Architect to meet the Program's needs, an evaluation of available modelling tools was undertaken to ensure commitment to a product that will meet both our business and information modelling needs.

This report outlines the approach undertaken to perform an evaluation of modelling tools, presents findings and provides recommendations regarding the procurement of the most suitable tool. The report is structured to provide:-

- an overview of Business Process Modelling generally and an explanation of how this relates to the [FC] purpose,
- a summary of the importance of selecting the right tool to meet our requirements,
- an overview of the evaluation and shortlisting criteria,
- detailed analysis and comparison of candidate tools, and
- final recommendations.

# 3. WHAT IS BUSINESS PROCESS MODELLING?

For the purpose of a Business Process review initiative, *Business Process Modelling* is the activity of representing both the current ("as is") and future ("to be") processes of an organisation, so that the current process may be analysed and improved. Essentially, it provides a graphical depiction of the process, enabling communication and a common understanding of the process with different stakeholder groups. Furthermore, this "documented knowledge" provides the means for structured analysis and discussion for improvement opportunities.

With the right tool, these models can be enriched with information regarding issues, risks, assumptions, opportunities, etc., and linked to information elements from other models such as data models and organisational charts to allow for deeper analysis and better enterprise wide reporting.

There are a broad range of other purposes for process modelling such as simply providing documentation on a process (without a view for improvement) at one end, through to designing automated workflow solutions at the other extreme. Therefore, it is critical to ensure that the correct tool has been selected to meet the process modelling needs and purpose.

The [FC's] purpose for modelling is mainly to review, standardise and improve the Case Management process and to also use these models to define business requirements for our future case management technology framework. Our approach is to devise a high level Process Pattern (model) as a basis to compare and analyse the "fit" of the process pattern to multiple instances of the process within the business. The idea behind the pattern-based approach is further explained by Stephenson & Bandara (2007) as part of the work conducted in the [State] Government Office of the CIO – Public works, towards a WOG approach to business process review initiatives.

# 4. WHAT TOOLS SUPPORT THE ACTIVITY OF BUSINESS PROCESS MODELLING?

## 4.1. Modelling Notations & Techniques

There are numerous business process modelling notations & techniques. The common aspect of these is that they contain a set of graphical symbols that depict different business system concepts, such as business activity/task, start and end events (i.e. the triggers and outcomes of a process), organisational units involved in the process/activities/tasks (e.g. business units, roles), resources/documents & systems that support the process/activities/tasks, decision symbols that depict the splits and joins within a process, and arrows that depict connections between all these other symbols including the sequence flow of the activities/tasks within a process.

BPMN (Business Process Modelling Notation) is the notation recommended by the [State] Government Office of the CIO and has been widely adopted as the "defacto" standard for business process modelling, partly due to the OMG's (Object Modeling Group) efforts to advocate this as a standard. The CPIP program, which was the precursor to the [FC] Program, used this notation while conducting reviews of various business areas within the Supreme & District Courts and the Magistrates Court. For all of the reasons above the [FC] Program has decided to continue with using the BPMN notation for business process modelling.

### 4.2. BPA (Business Process Analysis) Tools

Business process analysis tools (also known as Business process modelling tools) are specifically used for modelling business processes and information related to the processes, in order to document an organisation's processes and/or provide Business Requirements for improvement, re-design or automation. These tools provide a shared environment for the capture, design and simulation of business processes by business analysts and managers. BPA tools are modelling-only environments, not execution environments (Hill et al., 2006).

Because of the complexity of capturing end to end processes (particularly in a court environment), and maintaining and re-using these documented processes for continual process improvement alongside their corresponding information elements, a dedicated business process analysis tool is essential, as opposed to simple drawing tools such as Visio or SmartDraw. BPA tools provide more flexibility for business users as well as adding additional dimensions to process models. In addition to depicting process information via the symbols within the modelling notation, information ranging from human and physical resources, legislative authorities (and restraints), and issues and risks can be linked to individual tasks and processes. Some tools provide reporting options that allow the various aspects of the captured information to be retrieved and published electronically, in Web format, and/or in hard copy form. This allows the information to be shared through a variety of media amongst managers, staff and relevant internal and external stakeholders.

### 4.3. BPM (Business Process Management) Tools

Businesses Process Management tools (also know as Business Process Management Suites or BPMS) are intended for more than just business process modelling. While they may be used to model requirements, the main use is to implement & monitor processes in a workflow environment allowing for 'real time' monitoring and management of processes. As such, these tools are complex expensive overkill in so far as the [FC] Program is concerned and have therefore not been included for analysis.

# 5. CHOOSING THE RIGHT TOOL

There is a vast range of tools currently available on the market to cater for the wide variety of modelling objectives. For each single objective there are different modelling notations & techniques and the various tools are adaptive to these approaches. Having determined the notation & technique to be adopted by the [FC] Program, the next step is to evaluate the strengths and weaknesses of the various tools that support these to ascertain the one most suitable for our needs.

## 5.1. Business Process and Information Modelling Requirements for the [FC] Program

### 5.1.1. Establishing Appropriate Criteria

The [FC] Program team require a BPA tool that satisfies a number of Functional & Technical Requirements, as well as rating well on a number of other non-functional criteria. The evaluation criteria were broken up into categories and assigned appropriate weightings as shown below:

| **Evaluation Criteria** | |
|---|---|
| **Requirements** | **Weighting** (scale of 1-10) |
| **1. Functional Requirements** | |
| a) Ability to import/export data (preferably in .xml/.xmi format) | 9 |
| b) Data dictionary/glossary capability | 10 |
| i) Ability to set up a list of data elements with definitions, attributes, relationships to other data elements.. (e.g. ER diagram), | |
| ii) Ability to make references to alternative terms (used in different contexts) for the same data concept. (thesaurus) | |
| iii) Ability to classify/group data elements and provide a hierarchical decomposition of data elements. | |
| c) Flexible/easy to use report design capability (e.g. Ability to easily create customised MS Word reports, do matrices, etc) | 8 |
| d) Easy to deliver to HTML for intranet/internet | 8 |
| e) BPMN (full support, decomposition, link to data elements, etc) | 10 |
| f) UML support (to import /reuse small number of existing UML models created in Enterprise Architect) | 6 |
| g) Easy to Use & Understandability (intuitive) | 7 |

| Evaluation Criteria | |
|---|---|
| **Requirements** | **Weighting** (scale of 1-10) |
| i) Ease of customising for ease of use<br>ii) Repository & symbols easy to find & use<br>iii) Navigation<br>iv) Flexibility to show different views & symbols for different stakeholders<br>v) Drag & drop | |
| h) Customisation<br><br>i) Look and feel / set of model elements / attributes etc.<br>ii) Create own model elements for our library<br>iii) Ease of customisation, i.e. we can do ourselves<br>iv) Can apply Filters to hide irrelevant functionality & attributes | 10 |
| i) Support for business rules, policies & procedures<br>(i.e. capture business rules, policies and procedures during process analysis so that reports comprising these can be easily produced in line with registry management requirements). | 10 |
| j) Stability (i.e. stop auto reformatting of model connections etc..) | 8 |
| k) Version Control | 10 |
| l) Semantic Checking (i.e. automatic checking of model semantic correctness) | 8 |
| m) Simulation (i.e. for process analysis & improvement measurements) | 7 |
| **2. Technical Requirements** | |
| a) Able to be networked | 10 |
| b) SQL Server back end | 9 |
| c) DB is accessible independently | 9 |
| d) Consistent with Whole of Government requirements | 9 |
| e) Consistent with JAG, [OTHER RELATED PROGRAMS] platforms and tools | 9 |
| f) Licence Type (one off license fee can be capitalised) | 9 |
| g) Security (e.g. able to configure & manage user groups, etc.) | 10 |
| **3. Support & Maintenance** | |
| a) [State] based contractors available to come to us? | 10 |

| Evaluation Criteria | |
|---|---|
| **Requirements** | **Weighting** (scale of 1-10) |
| b) Help Desk phone line available during [State] Business Hours? | 8 |
| c) On line/real time Help Desk availability, incl. guiding documentation within tool | 8 |
| **4. Training** | |
| a) Courses readily available in [State] and aimed at assisting us to become self sufficient with the tool, including future customisation requirements? | 10 |
| b) Training materials available? (manuals etc) | 10 |
| c) Trainers readily accessible? | 9 |
| **5. Reference Sites** | |
| a) Local, [State] Govt references checked (Query requirements 1 to 4) | 6 |
| b) Other reference sites using these tools | 6 |
| **6. Costs** | |
| a) Software (Licences, Installation & Customisation) (against budget) | 10 |
| b) Ongoing Support & Maintenance (against budget & in-house skills for server) | 10 |
| c) Training (against budget) | 8 |
| **7. Other considerations** | |
| a) Team's current skills & knowledge of tools | 7 |
| b) Team's previous modelling experiences transferable to tool | 7 |
| c) Associations membership / accreditation status | 8 |
| d) Future Outlook of tool & support | 10 |

The criteria we weighted as **most important** were:

- Data dictionary/glossary capability to meet the requirement of developing the Information Architecture;
- BPMN full support as this is our chosen modelling notation which supports decomposition of processes. Also existing models created

within CPIP (Continual Process Improvement Program) are in this notation;

- Ability to customise the tool according to our modelling guidelines and standards;
- Support for capturing and linking business rules to process tasks so that reports comprising these can be easily produced in line with registry management requirements;
- Necessity for version control and ability to network clients to a central repository, preferably on an SQL Sever backend, as our projects are large and complex with multiple concurrent model users;
- Necessity to allow different levels of access & views on repository elements for security and reduced complexity depending on the user type;
- [State] based contractors who are readily available to come to us for assistance, courses and training materials, and who can provide the level of training that allows us to become self-sufficient in the use, and any further customisation, of the tool as well as custom reports as our needs change.
- Consistent with Whole of Government requirements and JAG, [OTHER RELATED PROGRAMS] platforms and tools
- Cost is within our budget
- Future outlook of tool is strong, with a proven track record and an established plan and vision for the future.

Other important criteria include:

- ability to import BPMN models previously created in System Architect;
- ability to provide customised reports and web published models;
- intuitive look and feel / easy to use;
- compatible with the [FC] team's current knowledge & experience with process modelling tools;
- provide supplementary help documentation;
- well established track record and reference sites.

## 5.2. Tool Evaluation Methodology

### 5.2.1. Constraints

This evaluation is based on the specific needs within the Department of Justice and Attorney-General. It should not be viewed as a total comparison of the tools

The depth of the evaluation was limited by time available; access to full functionality of toolsets (only trial demos available in some instances); as well as information requested from vendors to address all our criteria.

### 5.2.2. Identification of Candidate Tools

Once we established our evaluation criteria, we began identifying candidate tools for evaluation by researching case studies and market overviews including (but not limited to)-

- Business Process Trends - Newsletters on BPM Tools
- Gartner Reports - on Magic Quadrant for Business Process Analysis Tools
- The Forrester Wave reports – on Business Process Modelling Tools

Information sourced from these studies included evaluation of vendors based on their ability to meet a broad range of modelling needs across multiple organisational roles as well as those that perform well in the areas of functional coverage, strategy, support and marketing. Their analysis clearly identified a common group of vendors whose modelling tools were considered to be good performers under the established criteria. These findings became the foundation upon which potential candidates were short listed for our evaluation.

At the same time, we approached members of the BPM Roundtable (an Australian Community of Practice on Business Process Management), to request input from their experiences using BPA tools, based on our evaluation criteria. We received responses from approximately 10 different organisations (from both the private and public sectors).

Before a "short listed" tool was eventually selected for evaluation by [FC] we conducted further research on sites such as BPM Enterprise.com for any published white papers regarding each vendor/tool. Information regarding each tool was also sourced from the vendor's website and trial/evaluation versions of the tools downloaded. We also accepted tool demonstrations from vendors who offered this, i.e. Lombardi, ARIS & Mega.

The following are the tools eventually selected by the [FC] Program for evaluation:-

- System Architect 10.8 (Telelogic)
- Enterprise Architect 7.0 Corporate Edition (Sparx Systems)
- Casewise Corporate Modeler Suite 10.3E (Casewise)
- ARIS Business Architect 7.02 (IDS Scheer)
- Holocentric Modeler 5.1 (Holocentric)
- Metastorm Provision BPA (Metastorm)
- iGrafx Process 2007 (iGrafx)

- Savvion Process Modeler (Savvion Inc.)
- Mega Modelling Suite (Mega International)
- Lombardi Blueprint (Lombardi)

Below is a brief introduction for each tool. To assist with the discussion in the findings section we gave each tool a letter code to easily identify it. The tools are not listed in any particular order.

### A. System Architect 10.8 (Telelogic)

Telelogic System Architect® enables you to build a Business and Enterprise Architecture — a fully integrated collection of models and documents across five keys domains: Strategy, Business, Information, Systems and Technology.

> Telelogic System Architect's comprehensive solution provides a shared workspace for all team members to understand how to improve the company's architecture and overall business. System Architect promotes increased Organizational Agility, alignment of Business Processes and IT Systems to Business Objectives, planning, modeling, and execution of Business Processes (BPM) and rapid, effective and positive response to Business Change.

### B. Enterprise Architect 7.0 Corporate Edition (Sparx Systems)

"Sparx Systems' Enterprise Architect is a Computer Aided Software Engineering (CASE ) tool for designing and constructing software systems, for business process modeling, and for more generalized modeling purposes. Enterprise Architect is based on the UML 2.1 specification, which defines a visual language that you use to model a particular domain or system (either proposed or existing)."

### C. Casewise Corporate Modeler Suite 10.3E (Casewise)

Casewise Corporate Modeler is an enterprise modeling solution for streamlining business processes, optimizing use of resources and aligning IT systems with business goals.

> By providing a 360° view of the business, the suite enables teams to design, simulate and implement improvements that cut costs, increase productivity and align the business to reach new targets.

### D. ARIS Business Architect 7.02 (IDS Scheer)

ARIS Platform for Process Excellence offers the tools companies need to cope with continuous change across the entire business process lifecycle – tools which are also suitable for deployment in a wide range of projects.

Business Process Management (BPM) with ARIS Solution for Enterprise BPM comprises analysing, optimizing, communicating, and implementing processes. The integrated ARIS Value Engineering for Enterprise BPM procedure model provides dedicated work packages for defining strategies, identifying improvement potential, and supporting change processes.

## E. Holocentric Modeler 5.1 (Holocentric)

The Holocentric Modeler provides a living model of an organization, defining the relationships of all its components. It provides organisation modeling capabilities which quickly and efficiently bring together the strategies and goals, organizational structures and functions, people and roles, business processes and information requirements. In conjunction with the Technology Modeler, it relates the IT systems required to implement and facilitate the processes.

## F. Metastorm Provision BPA (Metastorm)

Metastorm ProVisionBPA provides end-to-end process modeling capabilities allowing our customers to model strategy, process and organizational responsibilities under one common framework. This superior process analysis, modeling and simulation environment is combined with industry acclaimed "ease of use" for both business and systems users. Metastorm ProVisionBPA's integrated and shareable web-based repository of process knowledge is scalable and available to the entire enterprise.

## G. iGrafx Process 2007 (iGrafx)

iGrafx® Enterprise Central™ is an enterprise modeling solution that aligns company processes, resources, and systems with corporate goals and strategies. iGrafx Enterprise Central includes iGrafx Process Central and enables compliance management, risk management, enterprise architecture and quality improvement initiatives. Through data integration and visual workflows, organizations develop comprehensive organizational models with multidimensional views of business processes, supporting systems, technology components and resources.

## H. Savvion Process Modeler (Savvion Inc.)

Savvion has created a comprehensive BPM suite, Savvion BusinessManager 7.0, which allows people to collaborate on process improvement ideas, test and rollout real world solutions, and control their daily process-driven business activities. It puts role-specific tools directly into the hands of those who know the process best so they can make an impact on the business.

## I. Mega Modelling Suite (Mega International)

The MEGA Modeling Suite promotes dynamic, Web-based intelligent reporting to bring strategic BPA and EA information to the entire organization.

### J. Lombardi Blueprint (Lombardi)

The Blueprint product, a new software-as-a-service environment that enables business users to do rapid process discovery and modeling, is Web-based and uses AJAX technology. This is integrated with the Teamworks BPM suite's modeling tools via the relatively new BPDM standard, but Blueprint is sold separately for a per-user fee and can be used by itself.

### 5.2.3. Approach for Analysis of Tools against Criteria

For each tool, we revised information gathered from our research into the tool (i.e. user reviews, published comparison reports from Gartner, Forrester, BPtrends, etc .., feedback from Australian community of BPM practitioners, information on vendors websites, etc.), downloaded and tested evaluation copies where possible to test ease of use, referred to documentation and tutorials within the tool, contacted vendors for further information, and requested expert demo's/presentations on the tool. We then systematically scanned the material gathered to rate against our requirements criteria.

In applying ratings for each criteria we first considered whether the tool possessed the capability at all and rated as 0 if it did not. We also rated as 0 where we could not obtain any information on the criteria. Secondly, we evaluated to what extent the tool addressed the criteria. Where the tool addressed all aspects of the criteria to a high level we rated this as 10. Varying levels of fit to the criteria were rated between 1 (low) and 10 (highest).[1]

Once all criteria for each tool were rated we compared ratings to discover which tools were strongest for each criteria. Following are the results from the analysis and a comparative discussion on the top 3 tools for each criteria.

[1] Further details, including the raw data relating to these ratings can be provided on request.

# 6. FINDINGS FROM ANALYSIS

| Tool Code | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| **Tool Name** | **System Architect** | **Enterprise Architect** | **Casewise Corpoarate Modeler** | **ARIS** | **Holocentric Modeler** | **Metastorm Provision** | **iGrafx Process 2007** | **Savvion Process Modeler** | **Mega Modeling Suite** | **Lombardi Blueprint** |
| **Requirements** | **Products Evaluated & Final Ratings** | | | | | | | | | |
| **1. Functional Requirements** | 354 | 387 | 399 | **507** | 342 | 366 | 377 | 216 | 447 | 301 |
| **2. Technical Requirements** | **406** | 226 | 235 | **406** | 260 | 332 | 205 | 108 | 143 | 116 |
| **3. Support & Maintenance** | 138 | 120 | 96 | **228** | 54 | 104 | 164 | 40 | 164 | 164 |
| **4. Training** | 232 | 50 | 149 | **261** | 118 | 70 | 175 | 70 | 175 | 175 |
| **5. Reference Sites** | 96 | 0 | 0 | **108** | 0 | 0 | 0 | 0 | 0 | 0 |
| **6. Costs** | | | | **quote recvd** | | | **quote recvd** | | | **quote recvd** |

## 6.1. Functional Requirements

**a)** The tool which rated best on **import/export capability** was ARIS, which is able to import/export in the following formats: XML, XMI, WSDL, XSD, XPDL, CADM(DoDAF), BPEL, BPML. This also enables future integration with BPM suites and is compatibility with Visio, txt and Excel, as well as IBM Rational Rose and ERwin.

The Mega suite can generate BPEL from workflow models and XML schema from class models and also provides various APIs and import/export formats. It uses an SCCI interface for 3rd party tool integration and the Mega Exchange module provides text-based import/export facility, XMI import/export facility for UML models, Rational Rose import/export facility for all UML models, BPEL export, and Erwin, Visio and ARIS import.

System Architect also supports numerous industry standard interfaces including BPEL for integration with BPM suites, XMI for UML, IDL for IDEF and XML. However 3rd party products are required to enable metadata Integration to exchange data with ERwin, Oracle Designer, & other data modelling tools. System Architect also has a COM-enabled APL, however we found this process cumbersome.

**b)** For **data dictionary/glossary capability** ARIS and Mega rated the highest, with both driven by a central database repository containing all models and knowledge of business processes. This ensures maximum reusability of the data and models. In addition, each of these tools provides data modelling notations that can decompose and group data into data sets, and maintain attributes and relationships to other data elements. ARIS has the additional capability of linking these data elements in a graphical way to process models.

System Architect rated next as it also maintains a central repository of definitions that can be reused. However to link these definitions to the process model is not straight forward and requires specific customisation. It also does not support a graphical depiction of the relationship between the process and data views.

**c)** ARIS Business Architect leads in **flexible/easy to use report design capability** and includes more than 100 predefined standard reports. A report wizard can be used to create a report (in MS Word/Excel, Adobe, PDF, HTML etc) by accessing report scripts within the package or that have been created (user defined) with the integrated ARIS Script Editor (IDE) or JavaScript. The latest version to be release in early 2008 has a new drag & drop feature to design layout. ARIS is also able to produce matrices for analysis of relationships between elements in tabular format.

Mega and Enterprise Architect rate second after ARIS. Mega comes with a set of easy to use document templates and can be customised to produce feature rich and graphically good reports. Enterprise Architect produces detailed and quality documentation in RTF and HTML formats. It can also produce Relationship Matrices.

It is important to note that the tool that rated lowest on this feature, where the feature could be identified, was System Architect. From our experience we encountered extreme difficulty in developing customised MS word reports. In particular, System Architect restricts the order in which models can be extracted to reports.

**d)** ARIS rated highest for the criteria of **Easy to deliver to HTML for intranet/internet.** In addition to being able to publish models and reports in HTML format, ARIS has the unique ability to allow direct entry of feedback into the HTML interface. Furthermore models can be easily navigated, including drill down capability, and attributes of model elements viewed.

Casewise Corporate Modeler and Mega also contain administration publishing modules that provide automated document generation in HTML to automate the generation of documents and Web Sites with hyperlinks and drill down capabilities.

Again System Architect rated the lowest for this criteria. While the capability is present, we encountered extreme difficulty and high costs of developing HTML templates.

**e)** ARIS and System Architect provide **full support for BPMN.** In addition, ARIS has the capability of extending BPMN with additional elements from its core process view, as well as bringing further elements and attributes from other views into the BPMN models, such as business rules, goals, & data elements, to provide richer graphical models.

Mega, iGrafx, Metastorm & Casewise Corporate Modeler all also have strong support BPMN.

**f)** Most of the evaluated tools provide **support for UML** with the exception of Lombardi and Savvion (unknown). However this criteria was included primarily to ensure that our UML models, previously created in Enterprise Architect, could be brought into the selected modelling tool if required.

**g)** ARIS, while a powerful and complex tool out of the box, rated well with **Ease of Use & Understandability (intuitive)** as it is easily customised to provide the limited set of functionality required by its users.

**h)** ARIS provides **customisation** to allow an individualised look and feel depending on the user by applying any number of standard filters or by creating your own customised filters. Furthermore, customised model elements can be easily added without the need for specialist consultants.

**i)** Both ARIS and System Architect provide strong **support for capturing business rules, policies & procedures.** In addition, ARIS Business Rule Designer available as "add-on" if required, provides additional functionality in this area.

Casewise Business Rules Extension supports Corporate Modeler users to capture, define and manage business rules within their natural context of business processes. Mega Modelling Suite also has the facility to store business data.

**j)** It was difficult to rate **Stability (i.e. stop auto reformatting of model connections etc..)** with only demo versions and limited time to use these.

However, this criteria was an issue with System Architect which contained several bugs including:- moving message flows and throwing users out unexpectedly during modelling. As a result information and work hours were lost.

**k) Version Control**

This was a difficult criteria to rate as we could not establish this for many tools. However, it appears that the leading tools have some degree of version control.

**l) Semantic Checking**

ARIS, System Architect and Holocentric Modeler rated highest for semantic-checking of models to comply with established modelling conventions.
However, System Architect does not provide sufficient user feedback to be useful.

**m) Simulation**

This was a difficult criteria to rate as we could not establish this for many tools. However, it appears that the leading tools have some degree of simulation capability. ARIS also has an extra "add-on" feature that allows for more sophisticated simulation.

## 6.2. Technical Requirements

System Architect, Enterprise Architecture Corporate Edition, Casewise Corporate Modeler and ARIS can all **be networked** with an **MSQL server Backend**. They can all provide **security** to limit access privileges of different user groups.

A main problem encountered with System Architect, however, was its volatility and regular crashing while in use, which often caused hours of work to be lost.

## 6.3. Support and Maintenance

ARIS was the only tool that can provide all of the following: a) [State] based contractors available to come to us, b) Help Desk phone line available during [State] Business Hours, and c) On line/real time Help Desk availability, incl. guiding documentation within tool. Furthermore, procurement of the tool from the local on-seller of ARIS includes client & server implementation, and a complete package covering initial customisation from thorough needs analysis, training and ongoing support.

System Architect has one consulting group that can provide local training in the use of the tool, however specific customisation requires further cost. The next closest consulting group we could find were in Tasmania. In addition to the cost of having customisation designed by this group, there was very little support in the actual implementation of this. Furthermore, the online help centre for System Architect is located in India.

## 6.4. Training

ARIS was the only tool where each of the following were available: a) Courses readily available in [State], b) Training materials available, c) Trainers readily accessible and willing to train to enable self-sufficiency with the use of the tool. We discussed this service with other users of ARIS and were told that the consulting company 'Leonardo', who are the on-sellers of ARIS in Brisbane, provide excellent service in this area. Furthermore, they have a genuine interest in passing on the knowledge and tools required for tool users to become self-sufficient. Our reference contact added that they very rarely require additional assistance from these consultants.

### 6.5. Reference Sites

ARIS was favourably referred to us by three organisations from the BPM Roundtable. This tool is also used by the Queensland University of Technology and the Sydney University of Technology in their highly esteemed courses on Business Process Management.

System Architect has been adopted by some local government agencies, including some sections of JAG. However, it was not reported as a tool used by any of the respondents from the BPM Roundtable, which represent leading process-aware organisations in Australia.

We also received anecdotal evidence suggesting System Architect is more suitable as an Enterprise Architecture tool, specifically for modelling the technical architecture. Whereas, ARIS Business Architect is more suitable for developing a Process Architecture and Information Architecture (collaboratively with the Business) and has better capability to graphically relate elements within these two architecture layers.

### 6.6. Cost

Throughout the evaluation process, two formal quotes were received from ARIS and iGrafx. While some vendors incorporated costing information into their marketing materials, the prices provided were both vague and challenging to comprehend without explanation.

The desire to capitalise the selected software modelling tool meant that the cost was limited to the capital budget and the licence type limited to that of a one off fee. ARIS costing was the only product to fulfil both the budget and licence type requirements. ARIS offers both a Sybase and SQL Server Solution. While the SQL Server was a more expensive option it became apparent that it was the more appropriate choice when taking into consideration ongoing costs and general support available in-house.

## 7. RECOMMENDATIONS

Overall ARIS Business Architect 7.02 rated the highest for all categories of criteria. In particular, ARIS satisfies our main requirements for Data dictionary/glossary capability; BPMN full support; ability to customise the tool according to our modelling guidelines and standards; support for capturing and linking business rules to process tasks; necessity for version control and ability to network clients to a central repository; necessity to allow different levels of access & views on repository elements for security and reduced complexity; has [State] based contractors who are readily available to come to us and assist us in becoming self-sufficient in the use and customisation of the tool; is consistent with Whole of Government requirements and JAG, [OTHER RELATED PROGRAMS] platforms and tools.

Furthermore, ARIS satisfies other important criteria, which includes: ability to import BPMN models previously created in System Architect; provide

customised reports and web published models; can be easily customised for an intuitive look and feel; is in line with the team's current knowledge & experience with process modelling tools; provides supplementary help documentation; is a well established tool with a proven track record and well positioned for the future.

The tool previously used by the [FC] team was System Architect, and numerous problems were encountered with this, triggering the search for another tool. In particular the weaknesses experienced using System Architect included: specific customisation to establish relationships between the data models and process models; extreme difficulty in developing MS word reports and HTML templates; specialised customisation & cost required to set up the UML feature; customisation, in general, required someone with the specialist knowledge and skills to write scripts etc., which was also costly; contained several bugs resulting in loss of information and work hours; poor data base structure; and general lack of tool support.

It is therefore recommended that ARIS Business Architect be procured as the preferred tool of use for the [FC] Program.

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**Web Links**

**Vendor Sites:**

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www.igrafx.com
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**Research Sites**

www.bptrends.com
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