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Recommendations Part 3 - Shared Information Registry



Royalty and Related Information Review
Task Force Recommendations
January 26, 1998



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The recommendation is to develop a registry containing key oil and gas information accessible and shareable by the Ministry and Industry

- The Shared Information Registry would:
 - Be an electronic warehouse of information with minimal calculation and processing.
 - Be the source of data for activities requiring processing or calculation (e.g. royalty calculation) which would then occur within existing software applications. All authorized organizations requiring energy sector information will access the Shared Information Registry and “pull” information from it to enable ongoing business practices to continue
- The Shared Information Registry should be developed and delivered by the Ministry with the following functionality:
 - Information generated by Industry will proceed through “ front end edits” to reduce error rates
 - Receive information from Industry to the Shared Information Registry via an electronic delivery method; disseminate from the Ministry to Industry in a similar manner
 - Provide a query, reporting and download facility to Industry and the Ministry
 - Provide access to the registry from the Internet
- To succeed the Shared Information Registry must:
 - Be a cooperative industry / government initiative
 - Be the residence of all identified information; not optional for industry or Ministry
 - Be supported by
 - Changes in people, culture and skills - 50% of the total success factor
 - Business and management processes - 35% of the total success factor
 - IT tools - only 15% of the total success factor
 - Recognize benefits will accrue as trust in the information increases over time

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The Shared Information Registry is a warehouse of Alberta petroleum and natural gas information used by the Industry, Ministry and by the public

The registry provides the means by which information within the energy sector is shared between and amongst Industry, Ministry and other stakeholders.

Dictionary definitions for 'register' and 'share':

Register: - book in which entries are made of details to be recorded for reference
- an official or authoritative list

Share: - the portion one receives or contributes,
- possess, use or endure jointly with others

The 'registry' is a storehouse in which official or authoritative information is recorded for reference. The key words are 'for reference' and 'official'. A 'shared' registry is a common registry which allows joint or shared usage and contains common or shareable reference information. The Ministry is the 'official or authoritative' body that is responsible for updates to the registry.

The registry:- supports the flow of valid, error-free information from industry to the Ministry,
- is available to anyone submitting information to the Ministry ,
- is a subset of information available for dissemination,
- is initially a Ministry responsibility.

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A successful Shared Information Registry begins with communication between Industry and the Ministry and evolves

- A successful Shared Information Registry will:
 - Provide one stop shopping for oil and gas sector information with potential in the future for containing additional energy sector information
 - Contain foundation (common data) and transaction (volumetric) data
 - Allow electronic access province wide
 - Be auditable, sustainable and expandable
 - Assure security and confidentiality
 - Provides elementary query, down load and reporting capability while allowing for value added services from the private sector
 - Be delivered using a phased implementation approach
 - Be used to facilitate:
 - royalty and regulatory information acquisition
 - industry to industry information exchange activities

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The Shared Information Registry will contain quality data increasing the value of timely, accurate information retrieval

- Information will be accessed and provided on the Shared Information Registry:
 - Operators provide volumetric and foundation data,
 - Digital transportation vehicles are used (Electronic Data Interchange (EDI) or Internet)
 - Edits are applied at the operator's site to increase accuracy and decrease costs,
 - Validation processes are employed prior to storing information in the registry; the originator is electronically notified of errors.
- Data conversion of historic information is required:
 - This will provide the means to initially populate the registry
 - Will ensure amendments can be processed consistently
 - Existing business processes can be maintained
- Access to the shared information registry must be managed:
 - Authorized operators and information owners (proprietary owners) for create and update
 - Business rules must be developed to govern:
 - 'read' access for other interested parties
 - 'delete' access

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Other areas must be examined to deliver a functionally rich and consistently available Shared Information Registry

- The ability to deliver a number of views (standard queries, reports, and data downloads) of information for use by:
 - Ministry users in the performance of their mandated functions
 - Industry operators and owners using Internet or dial up modems
 - Third party information vendors for value added resale
 - Other government agencies and the public
- Full disaster recovery mechanisms must be developed and delivered
 - Options surround the use of the proposed two servers:
 - Potentially one for update access and the second as retrieval or
 - One server located in Edmonton and the other in Calgary

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The tangible benefits of a Shared Information Registry include a reduction in rejected documents, rework, and paper for Industry and the Ministry

- Reduced rework and increased accuracy due to edits at “source” (front end edits):
 - Currently, rework costs are \$1M per year for EUB; industry compliance fees for S-reporting at current accuracy levels are estimated at \$2 -3 Million per year
 - DoE OAS rejects average 2,000 per month (10%)
 - Edits at source will result in a 50% reduction to approximately 1,000 OAS detail lines
 - Minimal cost savings will be realized by the DoE
- Reduced paper and associated costs:
 - EUB paper filings: up to 13,000 forms per month could be eliminated
 - DoE Royalty paper filings average 2,000 forms per month
 - Error rates from 17% - 30% dependent upon document type
 - Edits at source will result in a 50% reduction to approximately 200 input documents
 - Minimal cost savings will be realized by the DoE
- Industry has a single source of OAS information (no need to contact each plant for OAS data):
 - 10% or \$1M - \$1.5Million per year of Production Accountants’ royalty related time spent pursuing OAS information
- Faster and effective information delivery
 - Will provide a larger window for industry to create information through the use of electronic transportation mechanisms (EDI, Internet, etc.) to reduce data delivery, entry or conversion time
 - Reduced industry overtime estimated at 2-3 days per month per company (\$500,000)

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The intangible benefits from the reduction in frustrations and provision of new functionality are of equal importance as are the tangible benefits

- Inquiry capability against one consistent source of data for use by industry, the Ministry, and potentially other Ministries, other jurisdictions and the public
- Better decision making because of improved access to information:
 - Volumetric / transactional data
 - Field, pool, well and facility data
- Potentially less duplication in business processes and in the total number of databases containing the same or similar information (in DOE, EUB and in industry). This longer term benefit will be realized in time
- Reduced duplication of efforts, infrastructure investment, data storage
- Improved industry administration efficiency, and quality and consistency of data
- An environment that could grow to cover other common information needs when and where appropriate
- Facilitates business process reengineering, particularly in production accounting

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A set of industry volume and quantity assumptions were used to estimate the costs of the Shared Information Registry

	Industry	Ministry
Users	1,000	800
Wells	85,000	
Plants, batteries and other facilities	16,000	
Monthly information flows (forms) Ind to Min		48,000
Monthly information flows (forms) Ind to Ind	150,000	
Monthly information flows (forms) Min to Min		34,000
Annual rate of increase	5-10%	

Note:

The above is based on current Industry to the EUB and the DoE information flows. It does not reflect information flows from the Ministry to Industry. Concurrent usage is estimated at 20% of the usage shown.

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The initial development costs to deliver the Shared Information Registry range from \$6.4 to \$8.4Million

Activity	Industry	Ministry	New Costs
Development life cycle of a shared information registry from design through implementation (software delivery)			\$2M - \$4M
Server hardware and software			\$500K
Conversion of existing data (assumes clean data)		\$500K (EUB) \$500K (DoE)	
Training (trainer, CD production)			\$125K
Sub Total		\$1M	\$2.6M - \$4.6M
Implications on existing applications (assumes purely modifying data feeder systems)	\$1M	\$1.2M (EUB) \$600K (DoE)	
TOTAL	\$1M	\$2.8M	\$2.6M - \$4.6M

Note 1: The entire costing of the Shared Information Registry is predicated on using the current business practices. These costs are independent of the costs of the two other initiatives, Royalty Regime and S/OAS integration. The estimates assume all existing Ministry file creation activities (eg. Well data tape production) continue to be the responsibility of the current process owner.

Note 2: The opportunity exists to modify / port certain legacy applications from outdated platforms to new platforms thereby offering an opportunity to maximize application and business process effectiveness. The costs to perform this activity are not included in the above table.

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The estimated operational costs associated with the annual operational needs of a Shared information Registry are between \$800,000 - \$1.5M

- The estimated operational costs of \$800,000 - \$1.5Million per annum provides for:
 - application maintenance (break fix activity)
 - software, operating system and database annual license maintenance fees
 - operations staff
 - help desk staff
- The estimate does not include provision for:
 - new application functionality or enhanced functionality



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All issues related to the creation of the registry are resolvable however the “political issues” are considered the most significant

- Legislation and Regulations - rules for use of a Shared Information Registry must be developed
 - Recommendation:
 - To ensure that the operator directs specified regulatory and royalty information to the Shared Information Registry, legislation may require modification
- Legal - need to identify who has authority for compliance enforcement
 - Recommendation:
 - DoE and EUB retain the authority for compliance enforcement based on information provided to them by the registry
- Financial costs / funding must be considered
 - Recommendation for development cost funding:
 - Government to deliver Phase 1 as the Ministry is the primary user
 - Funding for future development / enhancements is to be determined based on primary usage (may be industry, government or joint)
 - Recommendation for operational cost sharing:
 - To be recouped through subscription and usage fees



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Additional “political issues” concern the management of development efforts, the governance and the impact of the Shared Information Registry

- The approach to the development of a Shared Information Registry:
 - Recommendation:
 - The development effort be managed by the Ministry with a steering committee and working committee consisting of representation from the Ministry, Industry and where appropriate, the service providers
- Identify governance and custodianship of the registry and its information:
 - Recommendation:
 - The maintenance and future direction of the Shared Information Registry be managed by a governing body representing both Industry and the Ministry
- The impact on third party service providers / resellers of information may cause concern
 - Recommendation:
 - Awareness of the future direction and involvement in development efforts will enable service providers and resellers to plan new products and services to retain and attract customers

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“Management issues” include security, standards, comprehensiveness, training, communication and organizational impacts

- All management issues are resolvable
 - Security - confidentiality of information must be managed
 - Recommendation:
 - Use a hierarchical structure to define security levels employing generic profiles, where possible
 - Manage create, update and read authorities through a hierarchical structure again utilizing standard profiles to define who has access to what
 - Standards - determination, maintenance and enforcement of standards must be performed:
 - Recommendation:
 - Standards, and infrastructure must be determined and documented early in the Shared Information Registry development life cycle
 - The team responsible for maintaining the Shared Information Registry will be responsible for continuing to enforce and evolve standards
 - Comprehensiveness of a Shared Information Registry
 - Recommendation:
 - Recognize conceptually this is the future direction, and based on usage following the implementation of Phase I, determine other data streams of value



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Training, communication and organizational impact analysis must occur to establish trust and promote the use of the Shared Information Registry

- Training is an ongoing concern
 - Recommendation:
 - Initial introductory training will be provided in a group forum
 - Ongoing training needs will be satisfied by CD and online / internet training tools
 - A help desk will be established to provide e-mail and telephone support
- Communications - building trust is a lengthy process
 - Recommendation:
 - Deliver the Shared Information Registry using a phased release approach allowing time between releases for trust to develop in the functions delivered
 - Deliver to Industry and the Ministry using planned, targeted pilot groups and continue to release the functionality on a pilot group basis
 - As part of the training document, provide information on how the registry can be effectively used
- Re-organization and re-deployment opportunities will exist in the Ministry
 - Recommendation:
 - An Organizational Impact Analysis must be produced involving affected Ministry areas recommending a proposed organizational structure as well as a plan for organization readiness

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“Technical issues” surrounding a Shared Information Registry are well understood and as proven throughout the world, are resolvable

- Information Technology expertise is available and will be required to:
 - Establish the operations infrastructure
 - identify hardware and software
 - support and manage the facility
 - Identify the Information Technology tools and techniques to be used
 - Use open systems in preference to closed systems architecture
 - Pursuit of “off-the-shelf” or packaged software where possible
 - Identify transmission methods and standards
 - Establish access methods

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The impacts of a Shared Information Registry on Industry, the Ministry and the service providers must be managed

- The impacts on information providers:
 - Industry corporate software systems will require some modification:
 - Systems providing foundation information
 - Production accounting systems
 - 3rd party service providers software will require modification (e.g. Triangle, Qbyte)
 - Current data entry / data conversion service providers procedures and software (e.g. FC Data)
- The impacts on information users:
 - Large and costly impact on existing EUB and DoE software applications
 - Information dissemination service providers (e.g. - EUB)
 - Some portions of the EUB data sales to public/industry may no longer be required
 - Current information re-sellers may have to adjust their product and service line to provide additional value (e.g. QC Data)
 - Very small filers of information may initially lack the hardware or software to enable access to the Shared Information Registry

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There are many methods to mitigate the impacts of a Shared Information Registry on Industry and the Ministry

- For information providers:
 - Allow current paper filings, and electronic filings to continue through to a future date
- For information users:
 - To build and maintain the trust which customers and potential customers place in the registry contents, the registry must start small and stay focussed on delivering the highest quality information to the customer base
 - Investigate / utilize existing “registry” providers where appropriate
 - Use current data stores in the EUB and the DOE as the initial "load" or source for historical information. The custodian will acquire current information on an ongoing basis
 - Provide service providers with suggestions as to the types of value added services for the future
 - Operators and / or software providers may elect to provide services to eliminate / reduce administration by providing packaged information
 - Establish common work stations to provide interface software / browsers for the registry
- For all stakeholders:
 - Ensure an early awareness of this initiative
 - An implementation date far enough in the future to enable all to plan accordingly
 - Ensure an adequate level of training is provided
 - Continue to consult with service providers during the development efforts

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A phased approach to implementing a Shared Information Registry is recommended

- A phased implementation with many releases per phase:
 - a release equates to a logical group of work partitioned to form a manageable delivery
- Phase I would include Industry to Ministry filings and associated compliance information from Ministry to Industry:
 - Foundation data (Release I)
 - basic information about wells, operators and facilities such as unique identifiers, location, status, classification and the like (currently contained on the S4 and similar documents)
 - Well volumetric data (Release II)
 - monthly volumes of oil, raw gas and water produced from or injected into each well (currently contained on the S1, S2 and S18 documents)
 - Facility volumetric data (Release III)
 - monthly volumes of various products received, processed, delivered and consumed at facilities (currently contained on the S8, S20 and S21 documents)
 - Owner volumetric data (Release IV)
 - volumes of pipeline quality product attributed to each well-owner (currently contained on the royalty reporting documents such as the OAS and RMF)
 - Annual filings (Release V)
 - allowable costs, operating costs, capital, custom processing (currently contained on the AC1-5 documents etc)

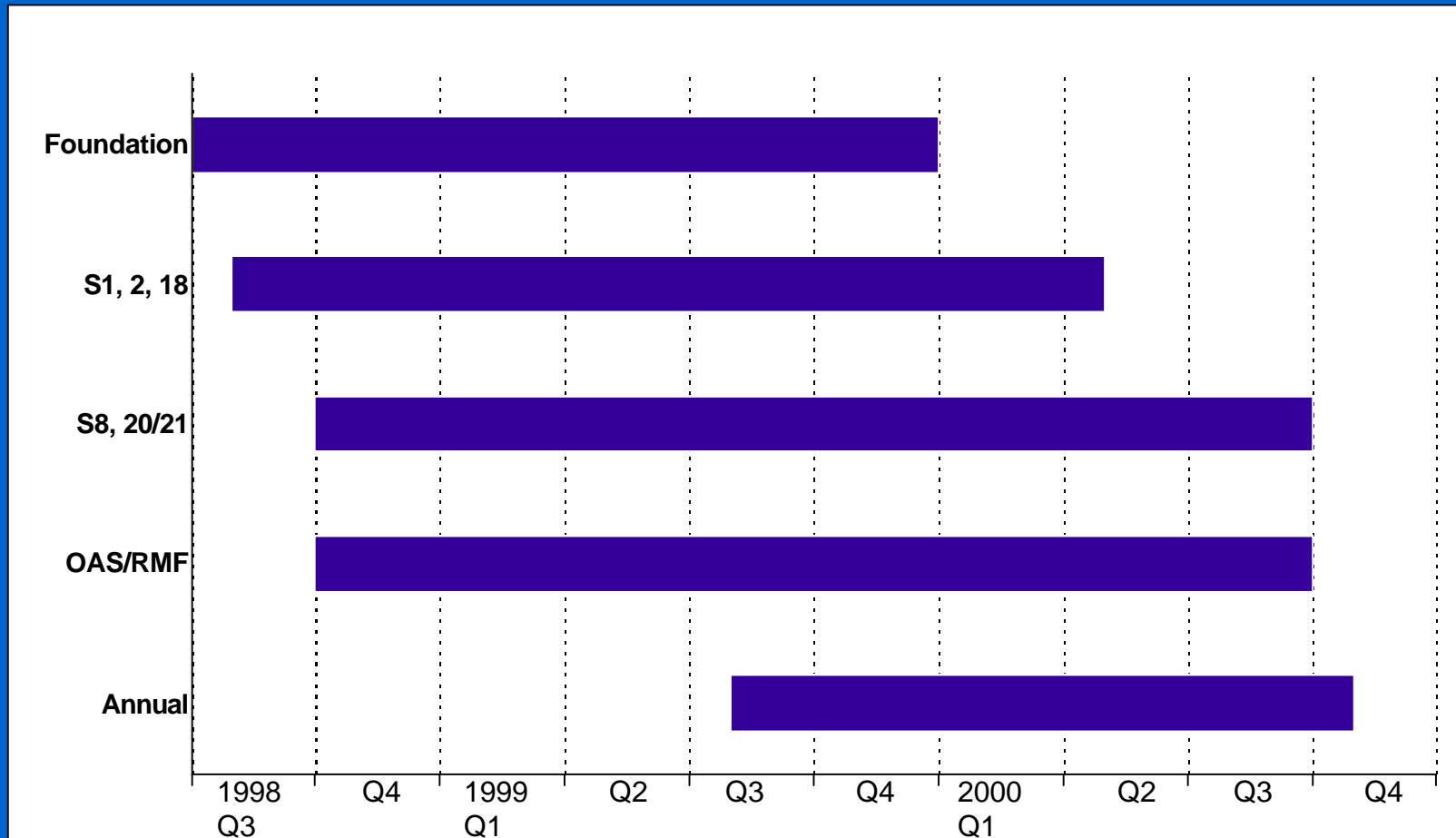
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Phase II deliverables are varied but include the ability to disseminate information from the Ministry and make it available for Industry retrieval

- Phase II includes dissemination of information from the Ministry to Industry, including:
 - Monthly royalty invoices and detail
 - Annual invoices
 - Industry letters
 - Various Industry reports (operator specific ad hoc and standard reporting)
- Subsequent phases would be based on information needs identified by the Ministry and Industry throughout the delivery and subsequent usage of this facility. Items which could be considered include:
 - Ministry applications
 - Mineral leases /tenure
 - Oil royalty
 - Oil Sands
 - Mineral tax
 - Petroleum Holiday information
 - Pipeline information
 - Environmental information
 - EUB Interpretive data
 - Utilities information

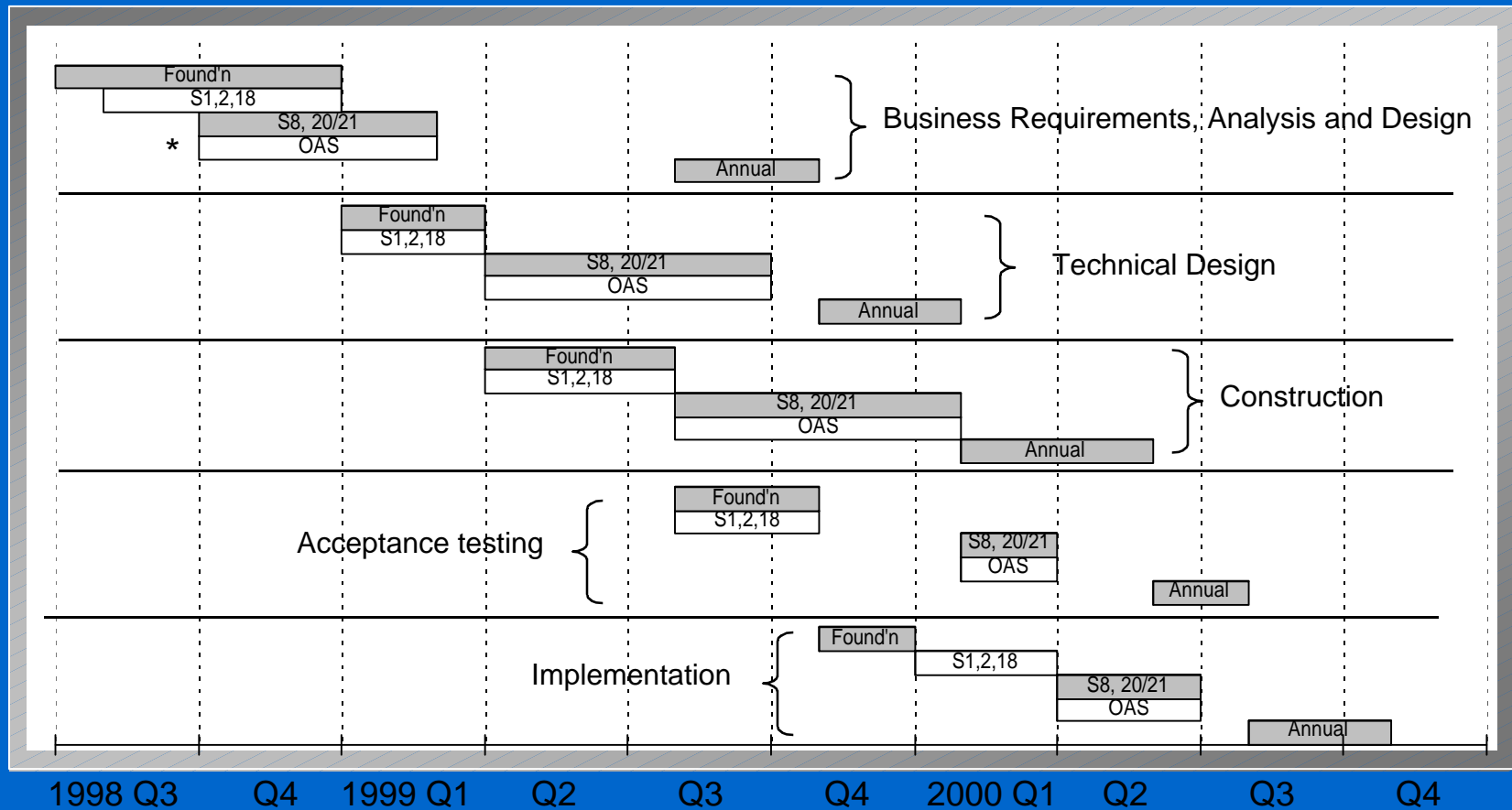
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Proposed high level work plan for Phase I shows five separate releases with first delivery in the fourth quarter of 1999



Note: Q1=Jan-Mar

The Phase I proposed work plan for the delivery of a Shared Information Registry anticipates parallel projects spanning multiple years



Note: Q1=Jan-Mar

* If S/OAS integration is approved, documented business requirements/rules must be available at this point

This illustration provides conceptual architecture referring to some of the many source documents used by Industry to meet Ministry requirements

