

Surf Life Saving Australia

IT Strategic Plan

DRAFT

22/7/2003

Katherine McLeod
IT Manager, SLSA
Barry Steele
hpfm solutions pty ltd

[Version draft C]

Reviewed and Approved by:

IT Manager Date

National Lifesaving Manager Date

CEO SLSA Date

Table of Contents

Table of Contents	iii
Revision History	iii
1.Purpose.....	1
2.Overview	1
3.Executive Summary	2
4. Business Rationale.....	3
5.Vision	3
6.Objectives.....	3
7.Guiding Principles.....	4
8.Goals	4
9.Current State	5
10.Assumptions, Risks and Dependencies.....	7
11.Organisation for Implementation of IT Strategic Plan	8
12.Criteria for Success	9
13.Implementation Agenda	10
14.Appendix A- Internal SLSA Projects.....	10
15.Appendix B - Related External IT Projects.....	11

Revision History

Name	Date	Reason For Changes	Version
B Steele	17/12/2002	Initial Draft	0.0 draft A
B Steele	21/2/2003	Second Draft	draft B
K McLeod	22/7/2003	Third Draft	draft C

1 Purpose

This plan provides an organisational IT Strategy for Surf Life Saving Australia to help meet its challenges and objectives for the next 3-5 years. The plan serves as a framework for decision making in respect to the introduction and implementation of IT related initiatives. The basis of this strategic plan is to match SLSA's Information Technology to its organisational objectives, goals and priorities, so that IT is an enabler not an end goal in its own right.

The plan provides:

- A decision framework for all IT initiatives through a set of guiding principles
- A reference for benchmarking and assessment of IT decisions
- A series of standards and high level objectives for SLSA's IT infrastructure
- A high level plan to translate the current IT infrastructure to comply with the identified strategic objectives.

The plan describes the infrastructure to manage the initiative, and defines an approach for identifying and addressing the IT process improvement issues throughout SLSA.

The plan has been developed by hpfm solutions on contract for SLSA and represents the interests of SLSA.

2 Overview

Surf Life Saving Australia has identified a number of major IT projects that will be covered by this plan. Appendix A lists internal SLSA projects. Appendix B lists related external projects.

At present these projects operate in an arrangement that can be described as either independent or unrelated.

SLSA has not set out to define a corporate IT Strategy in the past as the main objective of the organisation is to maximise the safety of Australia's beaches rather than develop IT applications. The increasing complexity and quantity of information capture, management and reporting requirements being placed on the organisation now requires a more structured approach to IT planning. These increased expectations must be met within an environment that is constrained in terms of available budget and IT resources.

SLSA's structure is one of a highly federated and geographically dispersed corporate body with several layers (local, state, national), many 'regional offices' (local clubs and branches) and a mixture of volunteer and professional agents. Mixed with this is also a mixture in the arrangements for the professional staff, some of whom are employed by SLSA, the state centres or local government agencies.

SLSA's goal is to be able to maintain a central IT system or set of integrated systems that meet the following objectives: -

1. Available online to all approved parties when required
2. Provides as near as possible real-time information
3. Is consistent across all layers (that is there is one view of data at any level regardless of location or access method)
4. Is easy to use
5. Helps the user to meet their needs
6. Is independent of the user's hardware and software set-up. In particular the SLSA system(s) should not require any proprietary hardware or software systems to be able to be used.
7. Provides a secure environment for users
8. Incurs minimal licensing or maintenance fees
9. Can be maintained and extended as necessary by SLSA staff (within reason)
10. Is scalable
11. Is well documented.

This plan provides an outline of the mechanisms recommended to achieve these results, a project timeframe for accomplishing this, some preliminary budget forecasts for the plan and expected benefits to flow from the implementation.

3 Executive Summary

This strategic IT plan is intended to integrate all IT activities within SLSA. It describes the goals, motivation, commitment required by various parties, assumptions that are being made, overall process to be applied in managing this initiative, and the infrastructure required to facilitate the initiative.

This document serves as the high level program plan for the implementation of the IT Strategic Plan, indicating an overall agenda, roles and responsibilities, assumptions and risks, key tasks, success criteria, key milestones, and how this initiative will evolve over multiple iterations of the continuous improvement cycle. A separate detailed schedule will be developed and used to manage the implementation of the IT Strategic Plan.

Management commitment to this effort is a critical success factor. Evidence of commitment includes:

- allocating appropriate and adequate resources
- continued input into and promotion of the plan
- setting realistic expectations and expecting accountability for realistic results
- providing clear, consistent, and public communications about the importance of the IT Strategic Plan initiative and the progress that is being made
- providing rewards and recognition for those exhibiting the desired process improvement related behaviour

Software engineers should be both permitted and expected to follow sound software engineering principles and practices to meet their project expectations.

4 Business Rationale

SLSA currently spends \$XXX (unknown at this stage) annually on IT development and support. In addition there are a range of data manipulation activities that are required as a direct result of the implementation methodology used to develop the programs.

SLSA can make significant gains in addressing some of the issues related to these developments. These include:-

- More timely and easily available operational data relating to issues such as incidents, conditions, beach audit status and patrol information.
- Reduction in budget required to maintain systems within the SLSA network.
- Ease of access for all stakeholders (for example, surf lifesaving clubs will be able to manage their operational data from any computer that can access the internet).
- Improve public education through the use of the internet.
- Reduced levels of rework and data re-entry.
- Higher data quality from single point of entry. This should lead to higher confidence in the systems, more acceptance of computer-based recording and more potential to use the consolidated data to improve public safety.

5 Vision

The IT Vision for SLSA is to provide an integrated collection of systems that support the continued improvement in the provision of a safe beach and aquatic environment throughout Australia.

To do this we see the IT systems providing access to the necessary information, educational resources and communication facilities to all stakeholders as required.

6 Objectives

The key business objectives of the SLSA IT Strategic Plan are:-

1. Improved quality of information
2. Improved predictability in IT budgeting and outcomes
3. Improved access to operational data
4. Consistent information recording and reporting across the organisation

7 Guiding Principles

The following guiding principles will provide the framework for future IT initiatives.

1. All data should be entered once and only once. The practical implication of this is that ideally there will be no copying or manual transfer of data from one set of files to another.
2. All data and applications will provide security and conform to SLSA's privacy policies.
3. Participating parties should not have to purchase any software to be able to access SLSA's systems.
4. Where practical, all new systems should support Open Standards (eg Java, PHP etc). Investment in proprietary systems for managing enterprise information should be discouraged.
5. All data exchange will use accepted international standards where applicable. If no such standard exists, an internal XML format will be agreed and used.
6. Where practical, systems will be developed or bought under General Public Licence agreements (<http://www.opensource.org/licenses/gpl-license.php>).
7. System implementation will be based on formal requirements management methods.
8. Where practical, all new systems will be web based.

8 Goals

8.1 IT Goals

8.1.1 Short Term Goals

The immediate goals for the IT Strategic Plan, over the next 12 months, involve the migration of existing disparate systems to conform to this plan.

These include:-

- Consolidation of the ABSAMP beaches database and coastal auditing system into a single database available to all stakeholders as appropriate.
- Consolidation of the current operational support systems: Complete Patrol Logger, State Watch and SurfMate.
- Communication and implementation of this Strategic Plan across the organisation.

8.1.2 Long Term Goals

The long term goal is to build an IT framework of systems, processes, methodology and standards that is able to accommodate and support the business objectives of SLSA into the future.

The outcome of this for SLSA will be a more defined framework of budgets, risk management and functionality leading to improved availability of information to support operational surf lifesaving, training programs and public education.

9 Current State

SLSA currently maintains a federation of applications each targeted to a specific component of the organisation's operations. These are not integrated with each other and require a relatively high level of effort to enable consolidation of data and preparation of reports at various levels (eg branch, state, national). The three major operational data sets include incident reporting, patrol/membership information and detailed beach data. The current state of each of these is summarised below.

9.1 Incident Reporting

Incident reporting provides the most immediate feedback of the effectiveness of the various training, education and other initiatives undertaken by SLSA to improve water safety. Incident recording must occur at club level as near as possible in timing to the occurrence of the incident(s). Currently this information is recorded on paper and forwarded to state centre, where it is then entered into a local PC based system using Microsoft Access and a specifically written application. The information in these state databases is exported to predefined format and e-mailed to the national office. The various e-mailed database extracts are then collated using an automated process in another Microsoft Access application. This collated database is then used to build national reports.

The incident reporting system has provided SLSA with an improved mechanism for maintaining and reporting on incidents over the paper based systems that had been used. The system does however suffer from some strategic weaknesses that will be addressed under this IT Plan.

These include:-

- Currently changes to certain base reference data are difficult. If a new category is required at the national level, it needs to be physically transmitted to each state and club and then updated at that site. If there is any failure along this trail, the results will be inconsistent and introduce otherwise unnecessary work loads to correct the errors.
- The system is based on the proprietary Microsoft Access database. This has a number of drawbacks, including the need to anticipate the impact of updating the applications to the latest version of Microsoft software. If the core (national) system is upgraded, the impact on participating clubs and states can be significant, and it may require complete systems upgrade.
- The export/import model of data capture introduces duplication of data sets (i.e. one in the club or state, one at national headquarters), which automatically provides opportunities for loss of synchronisation between the data sets. This can lead to inconsistent data and loss of faith in the data.
- Because the data is entered into one system and then needs to be exported from that system and then imported into the consolidated system, there is by definition a significant time lag between the initial recording of incidents and the ability of national SLSA staff to have that information at hand.
- These data are collected and maintained in isolation. Currently there is no connection between the recording of incidents, the operational patrol logging data and the base beach information. Any requirement to collate information across these core datasets must be carried out manually. Assessing the impact of programs aimed at improving the effectiveness of lifesaving activities or education therefore requires a significant effort.

- Data entry and analysis are limited to machines that have the software installed. The distribution of data management and therefore versions of the data introduces a range of quality assurance issues related to reporting from any of these machines.

Consolidating the data into a centrally managed database that is available securely over the internet will address most of these issues directly.

9.2 Patrol/Member Information

Operational patrol and member information is currently managed in two ways. Queensland clubs use a web-based system, SurfMate, developed by SLSQ, while the other states have adopted the Complete Patrol Logger(CPL)/StateWatch system developed by Caligular Systems.

CPL is well understood and used by most of the participating clubs and branches. The data capture and collation model is similar to the incident reporting system, in that data is entered locally at the club and then exported to the branch or state for collation at that point. The system seems to have been accepted now, but suffers from the same strategic concerns as the incident reporting system.

SurfMate is a web-based application developed to use Microsoft's internet technology. While this is still proprietary in nature, it does have massive exposure in the IT industry and can be considered an international standard for SLSA's purposes. The time available has not allowed a detailed investigation of SurfMate, though it would appear to be a likely candidate for adoption as a national standard.

Given the disparate nature of the current systems for recording operational patrol and member information, it is proposed that a detailed set of requirements be developed to assess the existing SurfMate system and any potential new initiatives against it to determine the most appropriate method to consolidate these data. At the core of these requirements will be the need to be consistent with the IT Strategic Plan.

9.3 Beach Data (ABSAMP)

SLSA and the Coastal Studies Unit of the University of Sydney (CSU) have been cooperating for over ten years on the development of a national inventory of beach information, called ABSAMP (Australian Beach Safety and Management Program).

This program has captured extensive information relating to nearly all 11,000 beaches on the Australian coast. There is some more information required for Tasmania to complete the initial data capture. The data has been recorded in a series of Microsoft Access databases, one for each state or territory, with the exception of the ACT, which is incorporated in NSW. There is also a MapInfo GIS (geographic information system) containing the same data.

As the data capture program proceeded, a range of new information requirements were identified. This has led to variations in the structure of the individual state databases.

Additionally, with an increased public review of safety and public liability issues, the need for more detailed hazard, facility and risk information has been identified. This has led to the planning of a coastal risk and signage auditing program. The major objective of this program is to build an updated risk audit and reporting database for all Australian beaches.

This information set is core to many other SLSA information requirements as it represents the fundamental data set for beach information. SLSA have commenced a planning and implementation program to consolidate these data, provide a user friendly data entry system and automated reporting facilities. The details of this program (ABSAMP) are available in the ABSAMP Scoping and Vision document.

10 Assumptions, Risks and Dependencies

The following are the major risks facing the success of this project:

ID	Risk Item	P	L	E	Mitigation Approaches	Who
1	Technology Technology change can devalue investment through obsolescence	0.3	10	3	<ul style="list-style-type: none"> •adopt recognised independent international standards •adopt formal process for modelling and design 	IT Manager
2	Resources Hardware & software licensing, and support (personnel) requirements, may impact negatively on other core activities	0.5	4	2	<ul style="list-style-type: none"> •contract management •continually report resource usage •factor life-cycle resource requirements into decision making 	IT Manager
3	Expectation	0.7	6	4.2	<ul style="list-style-type: none"> •adopt formal requirements management •continued reporting •adopt iterative development models 	IT Manager

P = probability of occurrence (0 to 1)

L = relative loss factor (0 to 10)

E = risk exposure = P*L

Figure 1 shows the four core SLSA strategic IT systems and their dependencies on each other. This shows that:

- Members, Incidents and Competition systems are dependent on the Beaches (ABSAMP) system for beach reference data
- Incidents and Competition systems are dependent on the Members system for member reference data

The major implications for all systems include :-

- A requirement to provide an interface for querying data from the other systems, as needed
- A call to get relevant data from the other systems

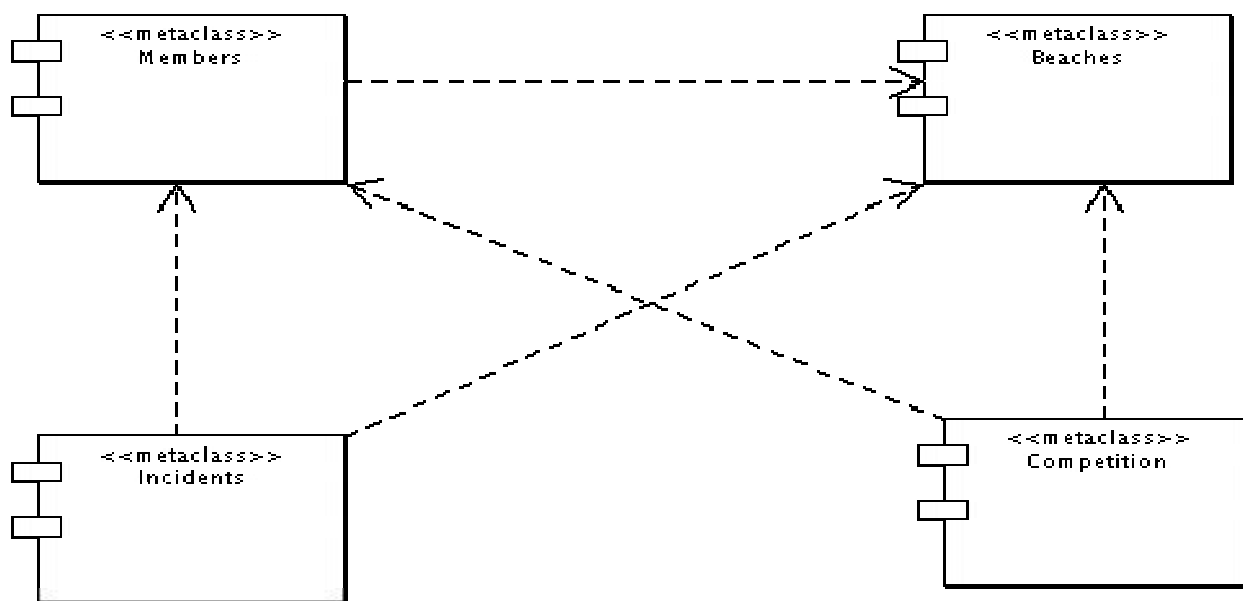


Figure 1: SLSA Core Strategic IT Systems

11 Proposed Organisation for Implementation of IT Strategic Plan

11.1 Organisational Scope

The impact of this plan will affect all levels of operational IT systems within the Australian surf lifesaving network. The following projects will fall within its scope immediately:

1. ABSAMP
2. Coastal Auditing
3. CPL/SurfMate
4. Incident Reporting
5. SurfGuard

11.2 Management Steering Committee

hpfm recommends SLSA appoint a management steering committee (MSC) to oversee the implementation of the IT Strategy Plan. The committee’s purpose will be to not only set overall IT direction and manage the plan but also to communicate the plan and provide public support for the various projects.

The committee would be expected to meet on a monthly basis initially for three months and then at either three or six monthly periods. These meetings could be integrated with other senior management meetings and functions.

11.3 Strategic Plan Implementation Team

The responsibilities of the IT Process Improvement Team include:

- documenting the organisation's strategic action plan (this document)
- creating a schedule identifying activities, resources, and effort
- tracking progress against the plan
- reviewing project team and working group action plans
- collecting status biweekly from the project teams and working groups
- summarising and reporting status at the MSC meeting
- suggesting corrective action to the MSC when actual progress deviates too far from the plans
- acquiring and coordinating resources for training and consulting

11.4 Working Groups

Each core project should also include small working groups that drive the implementation of individual projects in accordance with the IT Strategy. It would be expected that each of the projects above would have a working group of 3-5 interested parties.

12 Criteria for Success

The following measures will be used to indicate the success of this plan.

- Increase in the availability and accuracy of operational information as required. This can be measured as the amount of time and effort required to produce both standard reports and responses to ad-hoc queries from interested parties.
- A reduction in requirement for clubs to purchase licences or support arrangements.
- Increase in access to SLSA operational systems by participating personnel from their home or office.
- Increased availability of data or information products to clubs, public and sponsors.
- Commercial use of information products.
- Improvements in data quality.
- A range of specific measures and goals can be developed to monitor the success of the plan.

13 Implementation Agenda

The agenda for implementation of this plan is anticipated to be as follows:

Task	Feb '03	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '04
ABSAMP/Coastal Auditing												
Consolidate ABSAMP datasets	█	█	█	█	█	█						
Develop risk auditing data entry forms		█	█	█	█	█	█					
Develop risk auditing reporting mechanisms						█	█	█	█	█	█	
Integrate with other core data systems							█	█	█	█	█	
Incident Reporting												
Develop web-based incident reporting database				█	█	█	█					
Develop enhancements to interface							█	█	█	█	█	
Integrate with other core data systems							█	█	█	█	█	
CPL/SurfMate												
Document system requirements		█	█	█	█	█						
Review options against requirements					█	█	█					
Develop budget and funding options						█	█					
Develop first release of web based system							█	█	█	█	█	
Integrate with other core data systems											█	█
SurfGuard												
Develop value added systems (surf and hazard forecasting)												█

14 Appendix A - Internal SLSA Projects

Project	Description	Status	Application/Platform	Reference/Contact
ABSAMP/Coastal Audit database	Database of physical/geographical characteristics of every beach nationally (11,000+). Will be expanded to produce coastal audit reports based on combination of existing data and auditor's findings.	Existing	MS Access & MapInfo	Katherine McLeod, Research/IT Manager, SLSA
		Proposed	MySQL/web (PHP)	Andy Short, ABSAMP Coordinator, CSU
ABSAMP online beach atlas	Online interactive version of beach books, with photos, maps and descriptions of every beach	Proposed as part of SurfGuard project	Web	Katherine McLeod, Research/IT Manager, SLSA
SurfGuard	Surf and risk prediction system based on forecast and real time weather and wave data	Proposed	Web	Katherine McLeod, Research/IT Manager, SLSA SurfGuard Vision and Scope.doc
Incident Report Database (IRD)	Database of all major incidents (drownings, major rescues, injuries) by surf lifesaving services nationally	Existing	MS Access 2000	Peter Agnew, National Lifesaving Manager, SLSA
		Proposed	MySQL/web (PHP)	
Complete Patrol Logger (CPL) and StateWatch	Membership and patrol database used by clubs, branches and states (except Qld)	Existing	MS Access	Jason Hyde, Caligular Systems http://www.caligular.com/
		Proposed	Web (MS .NET)	
SurfMate	Membership and patrol database used by Qld clubs, branches and SLSQ	Existing	SQL Server, Access, Citrix Metaframe	Christian Holmes, Database Development Officer, SLSQ
SLSA web site	Include monthly club mail and discussion forum	Existing	Web (ASP)	http://www.slsa.asn.au/

Aussies Entries & TIDE systems	Aus Championships web based registration, event entries and event draw/results system	Existing	Web (ASP)	Chris Clark, Interfuse www.interfuse.com.au/ http://www.aussies.slsa.asn.au
SLSA database	Internal SLSA database of directors, committee members, coaches, officials, clubs etc	Existing	Access 2000	Danya Hodgetts, National Development Manager, SLSA
Archive Server	Web application for all levels of organisation, national -> club, to maintain a catalogue of historical archives	Proposed; history volunteers currently using standalone Access version Archive Manager	SQL Server, web	David Clements, Teigo Pty Ltd http://www.teigo.com.au/
SurfCom	SLSQ's GPS database	Call-out/tasking log and GIS linked to radio comms	Word, GIS	Mark Parsons, National Communications Officer Linksoft

15 Appendix B - Related External IT Projects

Project	Description	Status	Application/Platform	Reference/Contact
MUNCCI/ NCIS	Coronial inquest data - SLSA have access rights and will cross reference drowning data with our own IRD data	Existing	web	Monash University http://info.vifp.monash.edu.au/ncis
NIDAS	NSW injuries data – similar concept to MUNCCI, SLSA should be able to cross reference with IRD data	Proposed	web	NSW Injury Risk Management Research Centre http://www.irmrc.unsw.edu.au/
RealSurf	Surf report website with links to swell prediction systems	Existing	web	Don Norris http://www.realsurf.com/