



London Ambulance Service  
NHS Trust



**IM&T Directorate**

**IM&T Strategy for SIP 2006/7-2012/13 V0.11**

**08/08/2006**

**SSG Review**

**List of Contents**

<b>INTRODUCTION .....</b>	<b>3</b>
<b>1. STRATEGIC ALIGNMENT .....</b>	<b>4</b>
<b>2. DELIVERY FOCUS.....</b>	<b>5</b>
2.1 Business Benefits Realisation .....	5
2.2 Project & Programme Management .....	6
2.3 IM&T Staff.....	6
<b>3. INFORMATION SECURITY.....</b>	<b>7</b>
3.1 ISO 17799 & Security Controls.....	7
3.2 Single Sign-On .....	7
3.3 Business Continuity .....	7
<b>4. CUSTOMER DRIVEN SERVICE PROVISION .....</b>	<b>8</b>
4.1 Information Technology Infrastructure Library .....	8
4.2 Super User Programme.....	8
4.3 European Computer Driving Licence.....	9
4.4 File Management.....	9
<b>5. INFORMATION.....</b>	<b>10</b>
5.1 Data Map .....	10
5.2 Information Architecture .....	10
5.3 National Initiatives .....	10
<b>6. INFRASTRUCTURE .....</b>	<b>12</b>
6.1 Converged Networks .....	12
6.2 The London Ambulance Radio Projects (LARP) and the Implementation of Airwave ....	14
<b>7. SOFTWARE PROVISION &amp; SUPPORT.....</b>	<b>15</b>
7.1 Approach to software provision .....	15
7.2 Software Quality .....	15
7.3 Command & Control System .....	15
7.4 Web Development .....	16
7.5 Systems Support .....	16
<b>8. CLOSING THOUGHTS.....</b>	<b>17</b>

**List of Tables and Diagrams**

Table 1: Table of Strategic Action alignment to SIP 2006/7-2012/13 Programmes .....	4
Diagram1: The Fried Eggs of Business Benefits Realisation. ....	5
Diagram 2: Service Desk ‘Single Point of Contact’ .....	8
Diagram 3: The complete Picture - Single Access To Multiple Data Sources .....	11
Diagram 4: Integrated IP Infrastructure .....	13

## LONDON AMBULANCE SERVICE IM&T STRATEGY 2006/7 – 2012/13

### INTRODUCTION

Welcome to the London Ambulance Service IM&T (Information Management & Technology) Strategy 2006/7 – 2012/13. The underpinning ethos of the London Ambulance Service is one of continuous improvement. During the five year period 2000 to 2005, with the support of the Trust Board, the LAS embarked on a five year Service Improvement Programme (SIP 2000). This delivered over 250 individual projects, each of which enhanced the overall operational effectiveness of the LAS.

As the SIP 2000 drew to a close, extensive research from the whole range of Trust stakeholders was undertaken in order to set the LAS's future direction. The result has been the construction of a seven year Strategy, known as the SIP 2012. It clearly articulates the vision, rationale, drivers for change and methodology and hence they are not repeated within this Strategy. It has identified five strategic programmes of work that will collectively deliver a new, flexible ambulance service for London in order to realise the stated ambition of becoming truly 'World Class'. The five programmes are:

- Programme 1: Access and Connecting (the LAS) For Health.
- Programme 2: Operational Model: Strategy For Responding.
- Programme 3: Organisation Development And People Strategy.
- Programme 4: Partnership and Communication.
- Programme 5: Governance and Corporate Strategy.

Identified within the Strategic Plan is the requirement for this over-arching IM&T Strategy to support these five programmes. By way of definition, IM&T is used as an umbrella term; it includes software applications, use of information, network infrastructure and all the associated hardware. A key focus will be the realisation of real tangible business benefits. In this way, all projects and initiatives will be business driven and enabled by IM&T, rather than simply being an IM&T project. There will also be an alignment with best practice industry standards wherever appropriate.

Clearly signposted are a number of 'Strategic Activities' that are specific, tangible deliverables by which this strategy can be measured. At section 2 each of these are mapped against the 5 programmes. Importantly this strategy does not seek to set out detailed work schedules (these will be done as part of each programme), but it does set out the overall direction of travel for how IM&T will become a real 'enabler'. This is a seven year IM&T Strategy, but it will be reviewed on a 2 year rolling cycle.

Analysis conducted during the construction of the new 5 year programme also identified a strong desire from within the LAS for clear, focused support from internal LAS departments. Many activities seek to ensure a customer driven approach in terms of delivering this strategy. Finally much effort has been put into keeping the overall content of this document to a readable size. For whatever reason you are reading it, I hope you find it useful and informative.



Peter Suter.

Director of Information Management & Technology.

## 1. STRATEGIC ALIGNMENT

Strategic Action	Strategic Actions as defined within this document	Programme 1 Access and Connecting (the LAS) For Health	Programme 2 Operational Model Strategy For Responding	Programme 3 Organisation Development And People Strategy	Programme 4 Partnership and Communication	Programme 5 Governance and Corporate Strategy
2.1	Establish a regime of Business Benefits Management for all IM&T work.	√	√	√	√	√
2.2	Investigate options for developing an IM&T Apprenticeship.			√		
3.1	Develop Team to Deal with Security Incidents		√			
3.2	Implement Single Sign-On			√		√
3.3	Implement a schedule of IM&T business continuity initiatives.		√			
4.1	Implement all of the Service Improvement processes aligned with ITIL	√	√	√	√	√
4.2	Create IM&T Super User Programme			√		
4.3	Provision of the European Computer Driving Licence courses			√		
5.1	Develop a data map for the LAS.	√	√		√	√
5.2	Develop and implement technical M.I. architecture	√	√		√	√
6.1	Identify, design and implement a robust converged network infrastructure meeting the needs of the Trust.	√	√			
6.2	Provide on-going real time network management and appropriate levels of internal and contracted support.	√	√			
6.3	Implement the Airwave Service and enable on-going support through the Service Desk.	√	√			
6.4	Provide additional business benefits by developing enhancements to exploit the Airwave network and facilities	√	√			
7.1	Implement a customer focused process for effective software provision.	√	√			
7.2	Replacement of the current CAD system by 2010		√			
7.3	Develop an ongoing programme of short/medium term CTAK enhancements		√			
7.4	Develop the Net Services Management Group to oversee an on-going programme of web developments	√	√		√	
7.5	Implement a range of measures to manage systems against pre-defined service levels.	√	√			

**Table 1: Table of Strategic Action alignment to SIP 2006/7-2012/13 Programmes**

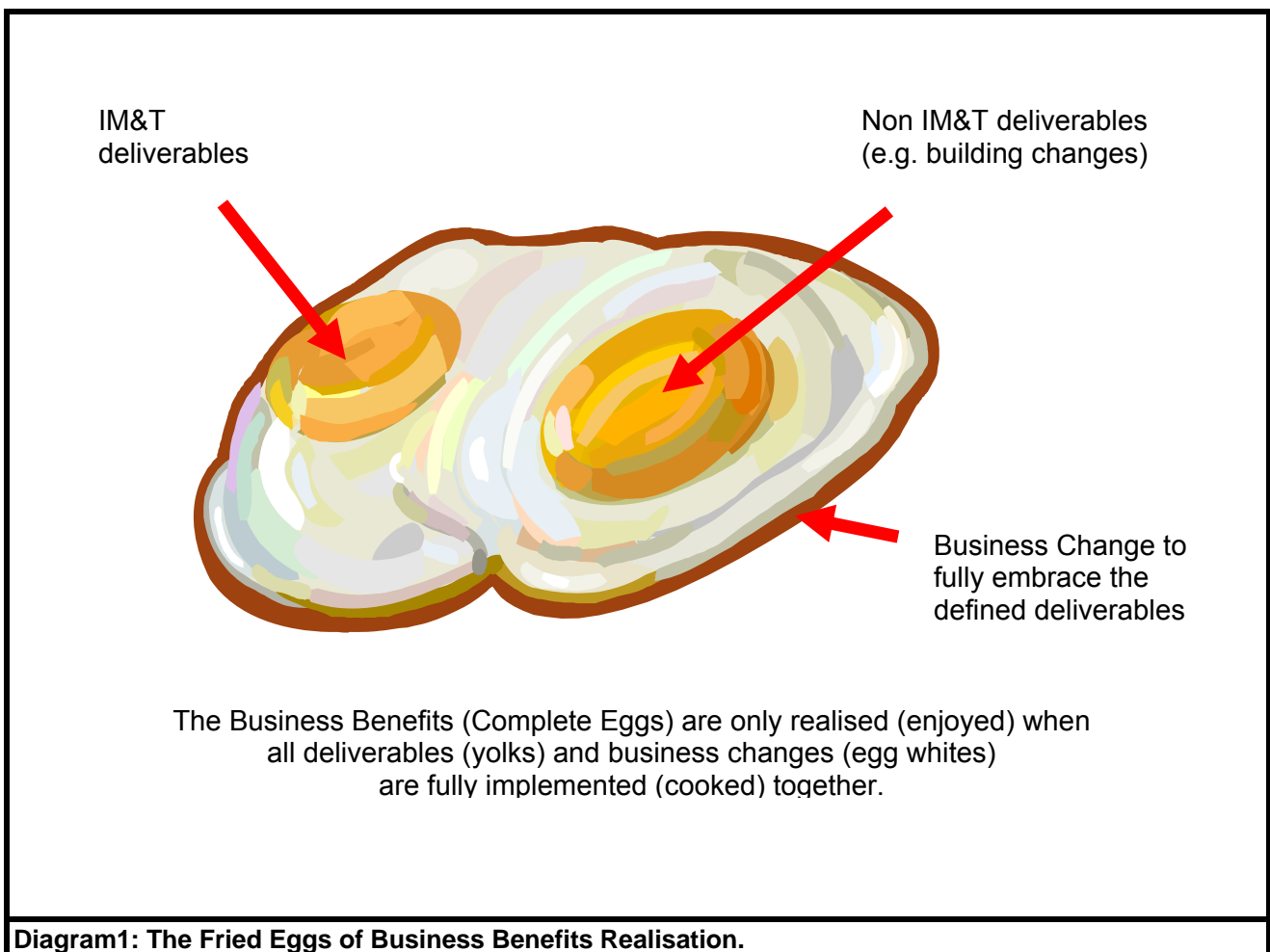
## 2. DELIVERY FOCUS

The underlying principle of this IM&T Strategy will be a clear focus on customer service and delivery. Recognising that not everything can be achieved at once and that, without an internal financial market, demand for delivery and service will always outstrip capacity to deliver. A number of measures will be developed to address this in-balance, these are detailed below. It is important to note however, that this list is not intended to be exhaustive and during the life of this strategy, other options will be developed.

### 2.1 Business Benefits Realisation

The principles of business benefits realisation apply consistently throughout this strategy but are not repeated within each section. The overall approach will be to deliver business benefits, not simply to deliver a piece of technology. In principle, projects should be 'business driven' and not considered as IM&T or technology projects.

All activities will commence from the perspective of identifying business objectives and how they will support LAS's overall objectives. There will also be an analysis of the other non IM&T deliverables (e.g. HR or building changes) that are also required. Business (change) managers, often those sponsoring the requirement, will be given specific responsibility to ensure that all the outputs are coordinated and that the desired benefits are actually realised - not simply that a piece of technology has been implemented. This will be a complete reversal of the traditional approach to IM&T delivery. The fried egg diagram is a metaphoric representation of this approach.



## 2.2 Project & Programme Management

Each individual project will be managed using PRINCE 2 and the overall seven year plan will utilise the OGC Managing Successful Programmes (MSP) methodology. Central to this approach is the requirement for business change and to ensure that actual benefits are realised by the implementation of new or changed IM&T facilities. This strategy does not set out to adopt a specific methodology of benefits realisation, (e.g. Cranfield) but will adopt the best industry practice.

**Strategic Activity 2.1: Establish a regime of Business Benefits Management for all IM&T work.**

## 2.3 IM&T Staff

Ensuring that there are the right staff, with the right IM&T skills will be fundamental to supporting the ambitious plans set out within both this strategy and the SIP 2012. The LAS IM&T function will require internal staff for development and support purposes. There will also be a number of strategic partnerships with third party organisations to provide additional resources and specialist services. In this way, the LAS will seek to ensure best value from a strong in-house approach supported by outsourced underpinning contracts.

The NHS Personal Development Review (PDR) and Personal Development Plan (PDP) process will form the cornerstone in developing LAS IM&T staff. There will be a clear objective to link personal development in the form of training and education as a positive benefit of employment with the LAS.

Notwithstanding the points above, it is recognised that recruitment & retention of IM&T staff has historically been a roller coaster of demand and availability. Whilst open market recruitment will continue to be used, consideration will be given to the concept of an in-house education programme offering a new approach for the future. This would include a recognised IM&T apprenticeship, aimed specifically at people looking for a future in this market place. At the end of a three or four year programme, involving periods of work experience, formal education and technical training, the apprentice will hold a recognised qualification, and will be capable of holding a junior IM&T support or development position.

**Strategic Activity 2.2: Investigate options for developing an IM&T Apprenticeship.**

### 3. INFORMATION SECURITY

#### 3.1 ISO 17799 & Security Controls

Within the context of this Strategy, Information Security should be considered as an 'umbrella' term that encompasses all aspects of accessing information securely. In order to implement robust and secure processes, the internationally recognised ISO17799 framework will be used as a guide, in order to avoid reinventing the wheel. However, it is not a requirement to achieve the certification itself.

Information security controls will be considered from the outset of new projects and initiatives, which will ensure that there are defined responsibilities and procedures for software development and procurement and products will be 'fit for purpose' and assured. This will then enable Confidentiality, Integrity and Availability (CIA) to be maintained within agreed parameters.

Dedicated incident response teams with defined responsibilities will be tasked to manage individual security incidents. Teams will be multi-disciplinary and dynamically deployed when required.

#### **Strategic Activity 3.1: Develop Team to Deal with Security Incidents**

Acknowledging that ISO 17799 establishes many of the necessary controls, below are two specific areas of activity;

#### 3.2 Single Sign-On

In order to automate authentication and provide simple access to the network for all staff, a Single Sign-On (SSO) strategy will be implemented. This will allow staff to access defined and required services (from any LAS terminal) without the need to logon to individual services. This will also provide centralised accountability and auditing of all network access.

#### **Strategic Activity 3.2: Implement Single Sign-On**

#### 3.3 Business Continuity

IM&T business continuity planning initiatives will be implemented, tested and a formal risk based approach will be used during the requirements stage of all projects. This will ensure that IM&T systems are appropriately resilient and tested regularly. This work will form part of the Trust's overall business continuity planning arrangements.

#### **Strategic Activity 3.3: Implement a schedule of IM&T business continuity initiatives.**

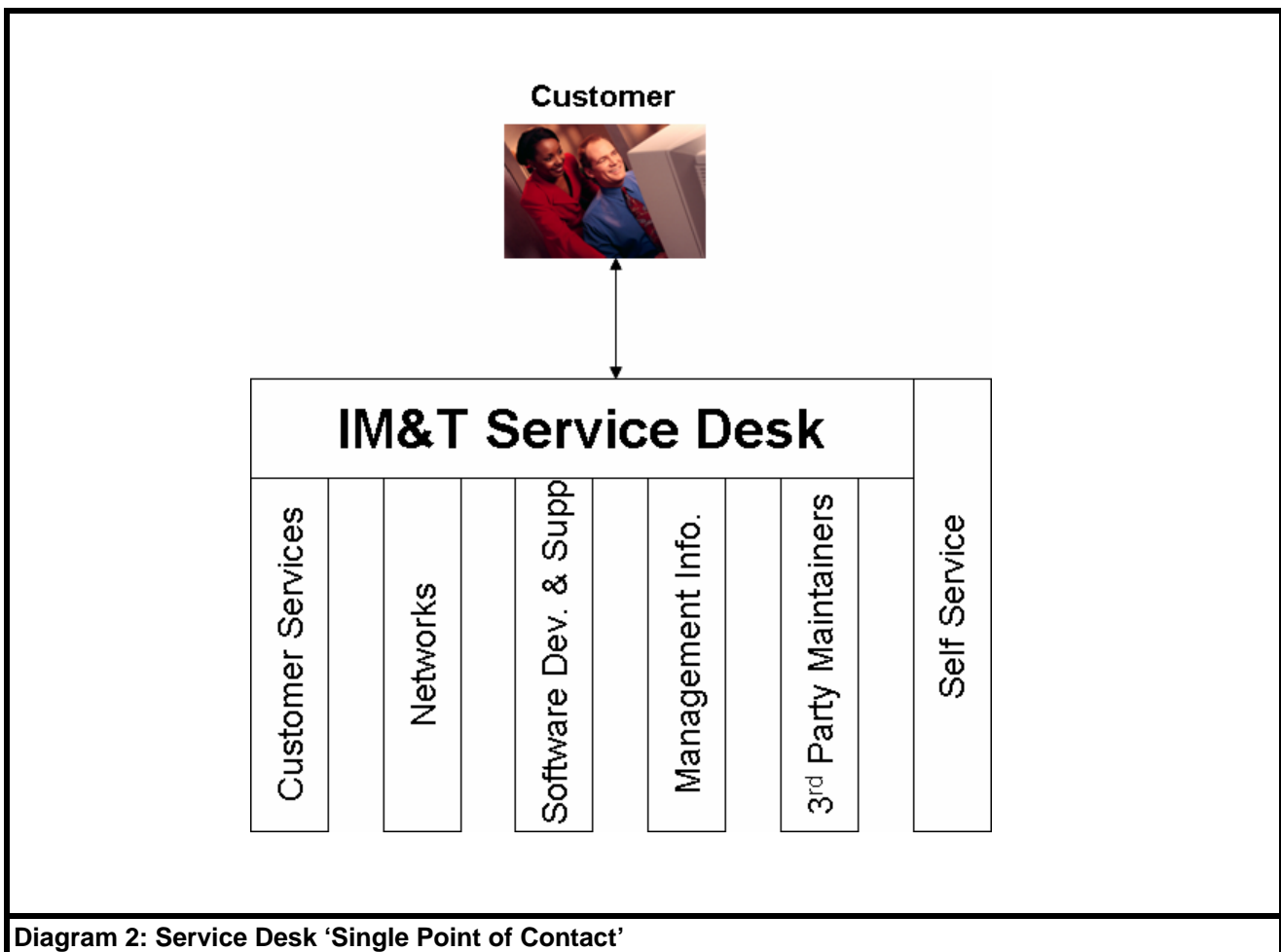
## 4. CUSTOMER DRIVEN SERVICE PROVISION

Customer service will underpin every activity of IM&T support and delivery. There will be a clear focus to ensure consistency and seamless working between IM&T Departments to deliver an effective and coordinated service. There will be a simple underlying approach to which the answer to the following question should always be clearly positive:

**If the IM&T Directorate were a commercial company, would it be the LAS supplier of choice?**

### 4.1 Information Technology Infrastructure Library

In order to realise the vision of providing excellent customer services, the IT Infrastructure Library (ITIL) best practice framework (in compliance with ISO 20000) will be adopted as a standard. This will ensure that services are underpinned by tried and trusted procedures and processes. The heart of which will be a central Service Desk that will act as a focal point for all service coordination.



**Diagram 2: Service Desk 'Single Point of Contact'**

**Strategic Activity 4.1: Implement all of the Service Improvement processes aligned with ITIL**

### 4.2 Super User Programme

Integral to the customer service approach will be the empowerment of customers through the creation of an IM&T Super Users Programme. This will provide recognition for IT literate LAS staff who provide local support to their colleagues. The key benefits of this will be to



improve communication, provide faster response to simple queries, develop IT literacy throughout the LAS and reduce demand on the IM&T Service Desk.

#### **Strategic Activity 4.2: Create IM&T Super User Programme**

#### **4.3 European Computer Driving Licence**

In order to ensure the effective use of IM&T driven solutions, training and education will become a core part of all provision. This will improve levels of satisfaction and also reduce the level of support required. The approach will be to utilise training delivered by the IM&T Directorate, Learning & Development department, E-learning and external training providers. The European Computer Driving Licence (ECDL) will be available as a base-line standard.

#### **Strategic Activity 4.3: Provision of the European Computer Driving Licence courses**

#### **4.4 File Management**

In order to provide a solution for file management, a range of applications will be implemented such as a document management and an effective e-mail archiving system. There will be numerous beneficial outcomes from this work, but the key advantages will be to avoid the duplication of data and support the compliance with the Freedom of Information Act.

## 5. INFORMATION

Over the course of SIP 2012, the approach to how information is captured and used will fundamentally change. The information vision is to:

- Maximise the use of all the data held within the Trust.
- Where possible, ensure that data is collected automatically.
- Where manually inputted, carried out as close to source as possible and re-used many times without the need for re-keying.
- Promote effective information sharing, analysis and informed decision making.
- Support information with additional knowledge about the patients treated and the environment in which they are treated.
- Provide tools and techniques to support the provision and analysis of information

In the context of this strategy data can be defined as “numbers, words or pictures without context, which exist and have no significance, and which can be useful or not”. Information can be defined as “a collection of numbers, words or pictures which have meaning”. Information is data that that has been put into a framework or structure that provides context.

### 5.1 Data Map

The first priority will be to map out all of the data that is held by the Trust to provide a clear understanding of what data is available and how it is created and stored. This will in turn provide a gap analysis in data and allow the Trust the opportunity to plan the capture of critical information to support the LAS strategy and delivery of services.

**Strategic Activity 5.1: Develop a data map for the LAS.**

### 5.2 Information Architecture

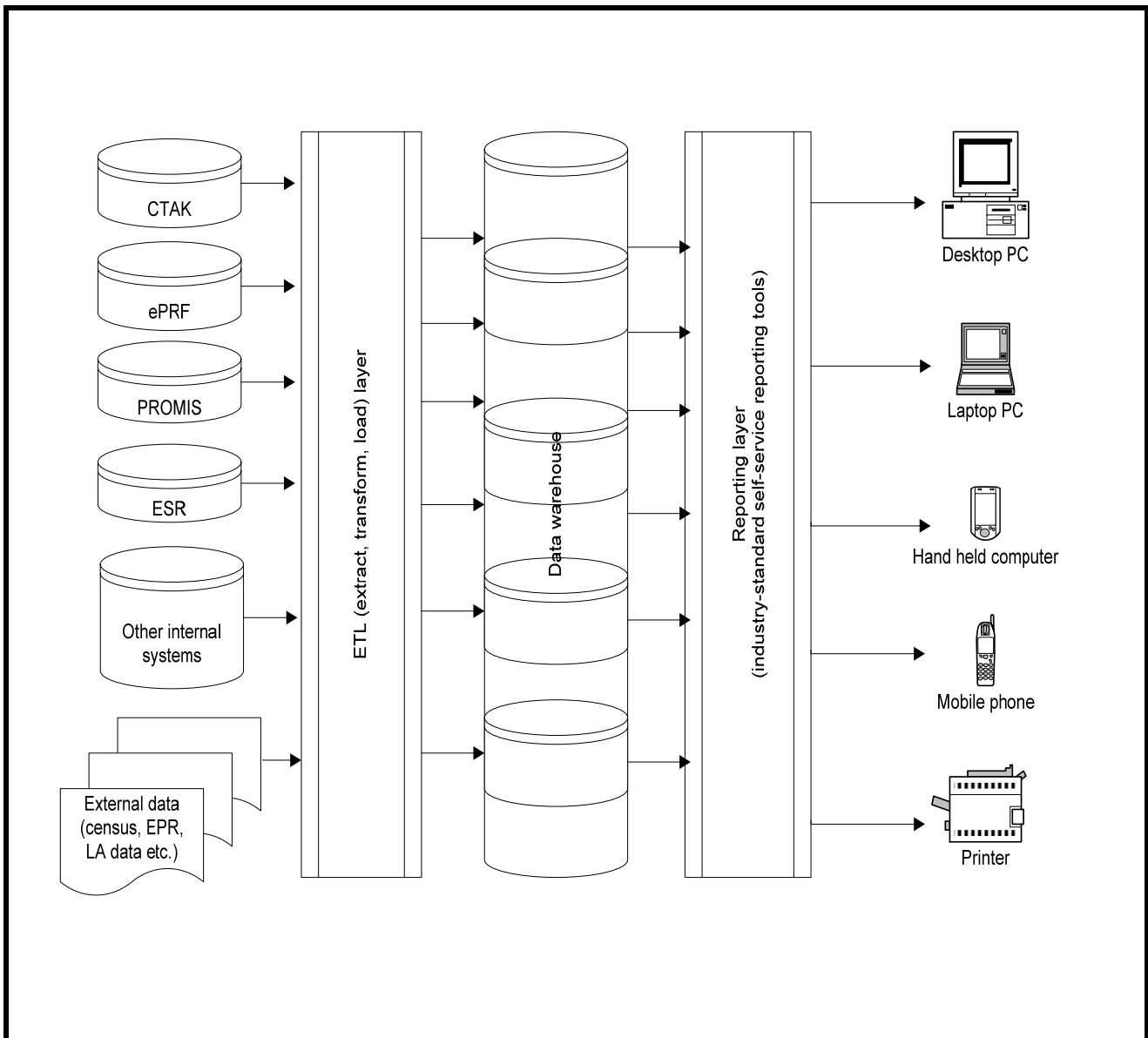
To support the information vision, a technical architecture will be designed and delivered to ensure that all data is held in a centralised information repository. This will enable data from the various systems throughout the Trust to be accessible and turned into information where appropriate. This will remove the requirement to access different systems in various formats to combine datasets.

Through the provision of appropriate tools & techniques, decision makers will be provided with direct desktop access to their required information. Routine/standard reports will be instantly accessible with the opportunity for managers to create their own reports using various tools. This will allow Trust staff access to information that they require to support decision making at all levels and will include appropriate access control for personal data.

**Strategic Activity 5.2: Develop and implement technical M.I. architecture**

### 5.3 National Initiatives

The LAS is committed to national initiatives such as Connecting for Health, ESR and ePRF via the Spine. It is recognised that take-up of these services as they mature will enable improved and efficient data capture and a range of clinical and operational benefits.



**Diagram 3: The complete Picture - Single Access To Multiple Data Sources**

## 6. INFRASTRUCTURE

The term 'Infrastructure' refers to the technology and connections that in the broadest terms, link servers to desktops and provides the complete sphere of telephony and radio communications. The infrastructure underpins the delivery of all IM&T services and has the target of providing the right information services, in the right place, at the right time.

In terms of overall performance, the aim is to enable any user to access core services with consistent performance from any LAS workplace.

### 6.1 Converged Networks

The vision of the IM&T infrastructure is to facilitate the movement of digital information irrespective of use. This entails a complete merger of voice/data/video traffic, utilising technologies such as 'IP Telephony (IPT)' where voice information is managed in the same way as traditional data traffic. It is therefore the stated intention to move away from proprietary equipment (e.g. PABX's) and manage the corporate infrastructure on common multi-purpose hardware and software platforms.

To support the converged vision, a new technical architecture will be designed and delivered. Diagram 4 illustrates how the concepts of a converged network may be applied within the Trust's infrastructure.

In order to realise this vision a programme of work will be undertaken to:

- Redesign the Trust's networks to provide a high availability, scalable, and robust IP network, supporting voice, video and data convergence, across all LAS sites, with secure interconnection with other organisations, and mobile and public networks.
- Implement voice services across the Trust using IPT, Airwave, and mobile telephony.
- Implement secure remote access to the network and wireless connectivity at Trust premises to facilitate flexible working.
- Support a standardised applications to maximise re-use and minimise client footprint. Include solutions for managing remote working devices.
- Review mobile phone and radio services with the aim of providing closer integration with the LAS voice networks and improved equipment support services to customers.

#### **Strategic Activity 6.1: Identify, design and implement a robust converged network infrastructure meeting the needs of the Trust.**

With an increased reliance on a single, albeit resilient, infrastructure platform for all voice, data and video traffic, it is essential that real time network management is implemented. This will include capacity and availability management processes and the remote management of all network component and system devices. Where necessary, specific measures will be implemented and maintained to provide enhanced levels of resilience and availability so as to underpin the continuity of Trust's critical operations.

#### **Strategic Activity 6.2: Provide on-going real time network management and appropriate levels of internal and contracted support.**

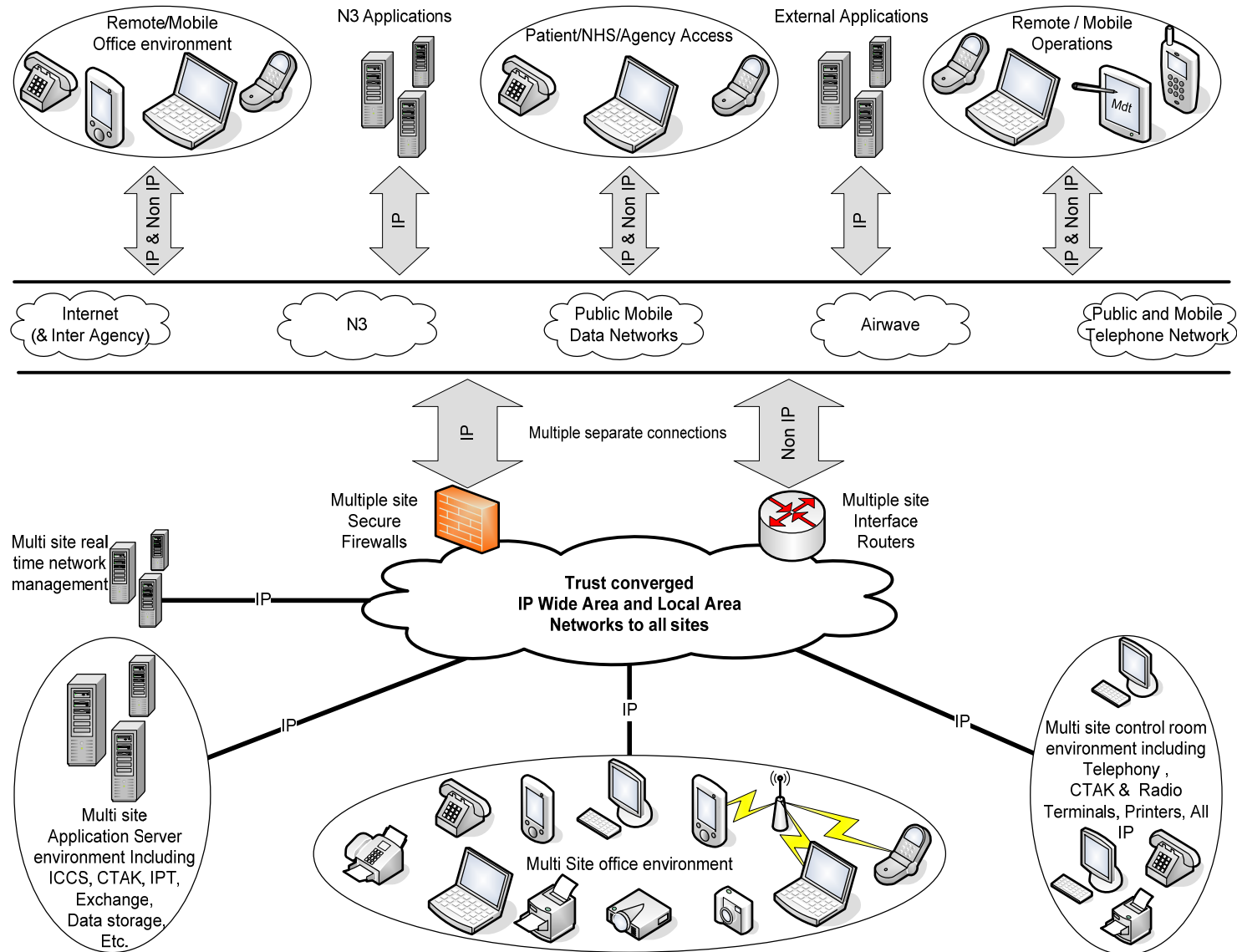


Diagram 4: Integrated IP Infrastructure

## 6.2 The London Ambulance Radio Projects (LARP) and the Implementation of Airwave

In July 2005, the Department of Health awarded a contract to O2 Airwave for the provision of a new digital radio service for all Ambulance Trusts in England. The replacement will be a centrally provided managed service delivering a digital radio network for voice and data services. This will include the supply of mobile and hand portable radios, control room dispatcher equipment connected to the network and the integration of existing CAD services.

The new network will deliver direct improvements in terms of coverage, capacity, functionality, improved flexibility and inter-operability with other emergency services. It will also enable a reduction in the operational reliance on public telephone networks. The success of this initiative is dependant on more than technical resources and implementation; engagement with internal customers will be vital to fully realise business benefits.

The managed service arrangement is a significant change in direction from the existing approach where the Trust owns and is in direct control of the radio infrastructure. Significant internal support will be required to manage the relationship with O2 Airwave and the DH Contract. Support will be co-ordinated through the IM&T Service Desk.

### **Strategic Activity 6.3: Implement the Airwave Service and enable on-going support through the Service Desk.**

The introduction of the new Airwave service will provide a number of enhancements that will provide significant additional operational benefit. The LAS will develop a specific project to ensure that these additional benefits are fully realised.

### **Strategic Activity 6.4: Provide additional business benefits by developing enhancements to exploit the Airwave network and facilities**

## 7. SOFTWARE PROVISION & SUPPORT

### 7.1 Approach to software provision

In terms of new software provision, the starting point will be to gather initial requirements and undertake a feasibility study. Where necessary, customers will be assisted in this process and the resulting requirements list will be prioritised and agreed with the requesting customer. This documentation will also form the basis of ensuring that what is delivered is what was required, and for inputting into the business benefits plan. This approach will influence the decision as to whether to proceed with one or a combination of the following;

- Amend an existing system
- Implement a third party product
- Provide an interface between existing systems
- Develop in-house (web services and a browser interface will be the standard).

There will also be a drive toward working collaboratively with the wider emergency services family to produce joined-up solutions.

**Strategic Activity 7.1: Implement a customer focused process for effective software provision.**

### 7.2 Software Quality

Software quality relates to the product being functionally correct (i.e. it does what is expected), operationally correct (it works in the correct sequence) and technically stable.

There will a focus to continually improve the quality of the products by following a regime of rigorous testing of both functional and non-functional aspects of systems and software applications

Where it is beneficial, comparison will be undertaken with models and best practice such as the Capability Maturity Model, ISO/IEC 15504 (SPICE - Software Process Improvement and Capability Determination), ISO 12207 (Software Life Cycle) and agile software development methods.

### 7.3 Command & Control System

The computer aided dispatch system (CAD) is the centre of a complex integration of applications critical to both the Emergency & Urgent Operation Centres (EOC & UOC). The current CAD System is known as CTAK (Call TAKing system). Its core function is the recording of 999 calls and the despatching of appropriate resources.

CTAK was developed in-house, has evolved incrementally and is now over 10 years old. The system is not fault tolerant, is unable to predict or warn of potential failures and is unable to support the level of availability and agility required by a modern ambulance service. It will be replaced by the CAD 2010 project. This project will thoroughly explore current and future business requirements, investigate procurement options and ultimately contract with supplier(s) to provide a system that will meet the current and future needs of the LAS.

**Strategic Activity 7.2: Replacement of the current CAD system by 2010**

However, given the projected CAD 2010 timetable, CTAK will continue to be enhanced in line with business driven requirements during the intervening period. This will include changes to allow more flexible operations and integration with the Airwave radio system under the auspices of the LARP.

**Strategic Activity 7.3: Develop an ongoing programme of short/medium term CTAK enhancements**

#### 7.4 Web Development

The first tranche of simple web applications were delivered on the 31<sup>st</sup> March 2006. The next series of enhancements and new solutions will be designed and implemented during 2006/7. An ongoing programme of further solutions will be managed over the lifetime of this strategy, looking to deliver at least 5 applications each year. A Net Services Management Group (with key customer involvement), will act as a steering group overseeing the evolution of Intranet/Internet developments. The web development team will receive work requests from, and report progress to, this group.

A suitable standardised method for software development, to be known as the London Ambulance Software Development Method (LASDM), will be evolved. It is anticipated that this will be based on a contemporary agile method with emphasis on requirements, prototyping and incremental delivery.

**Strategic Activity 7.4: Develop the Net Services Management Group to oversee an ongoing programme of web developments.**

#### 7.5 Systems Support

Recognising the increasing organisational reliance on information systems and the adoption of ITIL best practice, a range of proactive measures will be introduced;

- Performance matrices will be developed for all core systems. Monthly reports will be produced and shared with key customers.
- Named system administrators will take responsibility for individual system performance.
- Where appropriate, consolidation of server hardware and the use of 'virtualisation' will be implemented to allow multiple systems to be deployed on single hardware platforms.
- The business continuity requirement will be analysed as a part of the initial business justification and implemented accordingly. Service levels will then be managed against this requirement.

The objective will be to ensure that internal customers have a clearly defined level of service and that systems performance is measured and provided against this standard.

**Strategic Activity 7.5: Implement a range of measures to manage systems against pre-defined service levels.**



## 8. CLOSING THOUGHTS...

There can be a tendency to consider strategies merely as an essential management tool to produce, interesting to read and then never referred to again!

This cannot be the case with this strategy.

It will be the road map by which the IM&T Directorate will directly support the SIP 2012. Implementation of this strategy will deliver real tangible benefits to the LAS, its partners and the public of London who they serve.

True realisation of this strategy will ensure that;

- customers are provided with converged IM&T services at the point of need
- there is ongoing provision of converged IM&T services to replace manual processes
- standard methodologies and national initiatives are positively embraced
- all services are appropriately resilient to failure and disaster
- new technologies are continually evaluated and implemented where appropriate.

Strategising is now over, the difficult work of empowering the LAS with effective and efficient IM&T services must now begin...

***"An empowered organization is one in which individuals have the knowledge, skill, desire, and opportunity to personally succeed in a way that leads to collective organizational success."***

***--Stephen Covey***