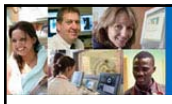

NHS Connecting for Health

NHS Connecting for Health
A National Framework For Electronic SAP Implementation

NHS Connecting for Health

Agenda

1. Project context and outline
2. Consultation
3. Key requirements and principles
4. Scoping and implementation of eSAP
5. *Information sharing model:*
   - *Personal Demographic Service*
   - *Publish and Subscribe Service*
   - *Transaction Messaging Service*
   - *Consent*
   - *Registration and Authentication of system users*
   - *Information Exchange standards*
   - *Schema Management*
   - *Technical model*

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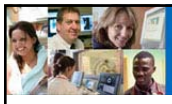

NHS Connecting for Health

Project Context & Outline

Context

- Different paces and approaches to implementing electronic SAP.
- Uncertainty for local care communities and system suppliers.
- Boundary difficulties for some service users.
- ➢ A need to develop a consistent national framework.

Outline

- To develop an implementation plan and business case for electronic SAP for England.
- First stage to define and evaluate options for electronic SAP.
- Initiated by NHS Connecting for Health.
- Reporting to ESCR Board, Care Records Development Board & National Programme Board of NHS CFH.
- Project board chaired by David Johnstone, with representation from health, social services, DH, Department for Communities and Local Government (ex-ODPM), DfES and the Cabinet Office.

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Project Process & Timescales

MARCH:

- Fact-finding and raising awareness
- Building the Architecture Framework

APRIL / MAY:

- Undertake the consultation.

MAY / JUNE:

- Review validity of outcomes and prepare report for Project Board.

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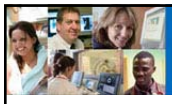

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Consultation

Use SAP websites of Centre for Policy On Ageing and NHS CFH.
– www.esap.org.uk

Work with established forums (ADSS IMG, Adaptor's Club, etc.).

Disseminate through SAP leads.

Meet other key organisations: IT suppliers, other relevant initiatives – e.g. Children's Index, eCAF, Government Connects, FAME.

Respond to queries and issues registered through the websites.

Maintain a communications log.

Key Requirements

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Person-centred processes and records.

SAP information sharing should extend to carers as well as to individual service users.

Available to health, social care and other workers, providing care to individuals at diverse locations.

Each item of information entered once only and subsequently validated or updated by other users.

All relevant SAP information available to system users when and where needed, wherever originally entered.

All users having seamless access to the information in which they have a legitimate interest.

All relevant SAP information being notified to users in a timely manner.

Views?

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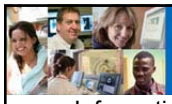

Principles

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Information that is shared will be subject to individual consent.

Compliance with NHS Information Governance standards:

- Legitimate relationships (i.e. requires a direct care relationship).
- Role based access (i.e. only information which is appropriate to the staff).
- Audit trails of all information accessed.
- Use of the NHS number as a common identifier.
- Use of secure networks.
- Registration and authentication of system users.

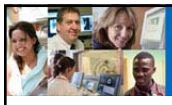
Systems from different suppliers must interoperate using standards

Commonality of process from SAP to the Common Assessment Framework ('Our Health, Our Care, Our Say').

Support evolution of both the process and information associated with it.

Build on existing systems

Views?



Areas of Discussion

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Scoping

Implementation workstreams

Information Sharing Model:

- Personal Demographics Service
- Publish & Subscribe service
- Transaction Messaging Service
- Consent
- Registration of System Users & Authentication
- Information Exchange Standards
- Schema Management

Technical Model

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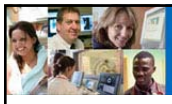

Scoping

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The potential scope of an electronic SAP system:

Client groups covered - all adults (in line with recommendations for a Common Assessment Framework).

Functions provided – case finding, assessment, care planning and review.

System users – service users and carers, care professionals and support staff from the NHS, social services, independent and voluntary sectors and Local Authority housing services.

Others requiring outputs or referrals – fire service, police, education, leisure services, others (please specify).

DISCUSSION

National assessment tool - should a national assessment tool be developed, or should eSAP support local assessment tools?

DISCUSSION

Implementation Workstreams

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To implement electronic SAP the following will be needed:

- Joint governance encompassing the NHS, social services and other agencies involved in delivering SAP.
  - National protocols for information sharing, i.e. who can access what information and for what purposes.
  - Definition of national schemas, including processes and associated information sets, data definitions and coding.
  - Definition of national business rules to set out the circumstances for information to be shared.
  - National reporting requirements to ensure standard reporting definitions across agencies.
  - Definition of consistent electronic record retention policies across the NHS, social services and other agencies involved.
- Mechanisms for service users and their carers to access their own records and participate in assessments and care planning.
- Connectivity between physical networks and mobile technology to support recording and access to records in the community.
- Education, training and development of care professionals and others working with electronic SAP systems.

DISCUSSION

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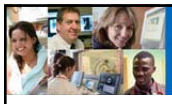

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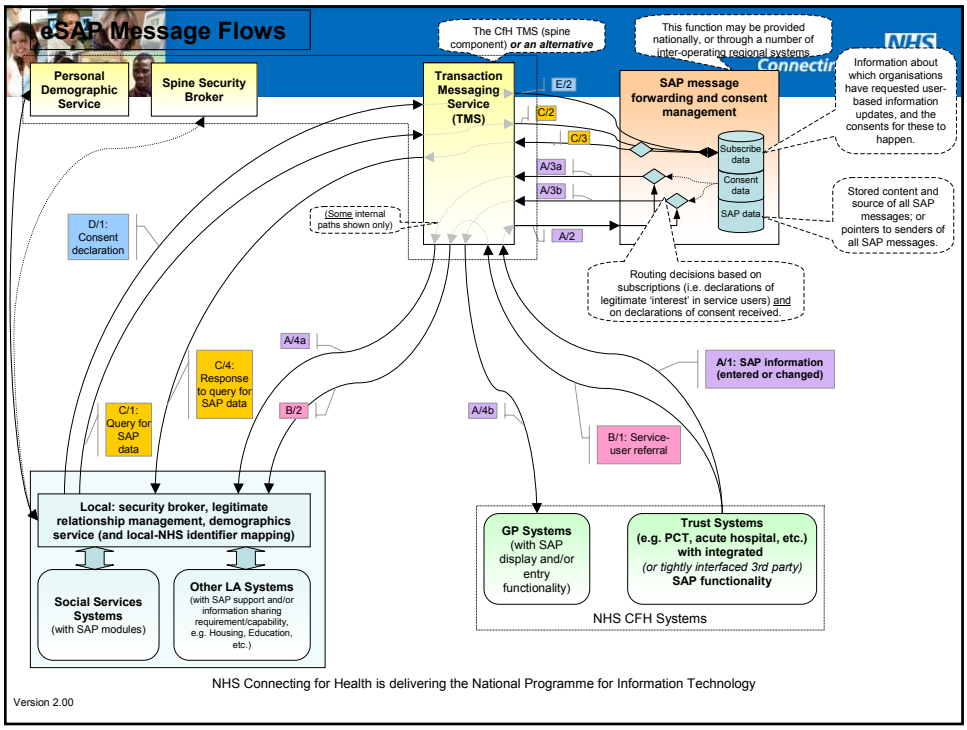
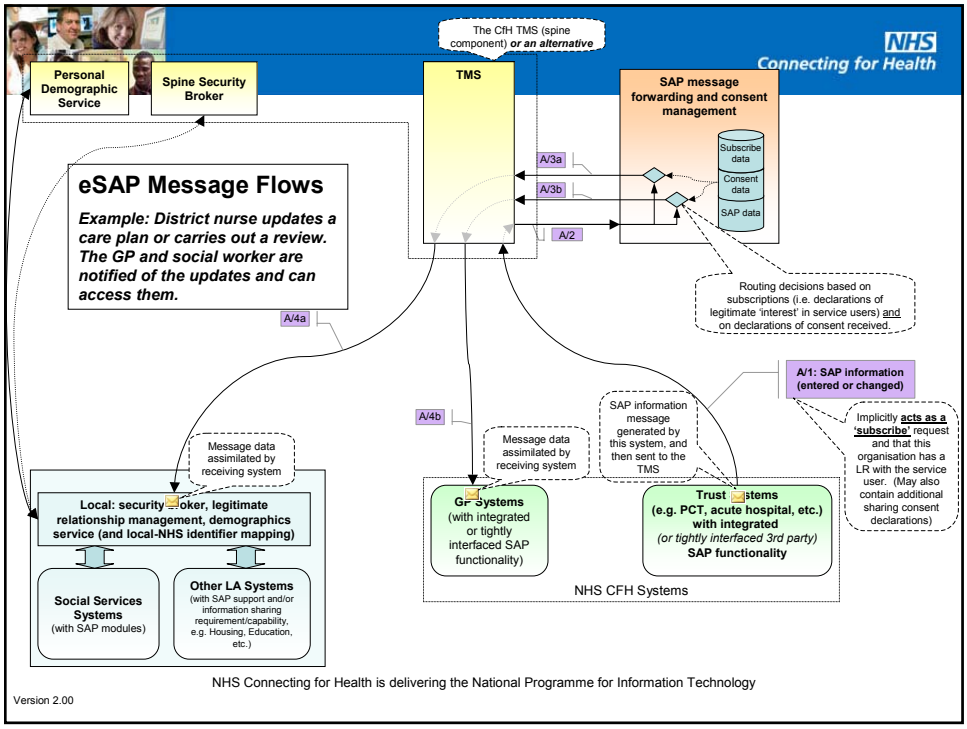
Information Sharing Model:
General

What are your views on the overall information sharing model (see next slides)?

Are there alternative approaches that you would recommend?

What are your views on implementing the model?




NHS
Connecting for Health
The CfH TMS (spine component) or an alternative
Personal Demographic Service
Spine Security Broker
TMS
SAP message forwarding and consent management
Subscribe data
Consent data
SAP data
A/3a
A/3b
A/2
eSAP Message Flows
Example: District nurse updates a care plan or carries out a review. The GP and social worker are notified of the updates and can access them.
A/4a
Routing decisions based on subscriptions (i.e. declarations of legitimate 'interest' in service users) and on declarations of consent received.
A/1: SAP information (entered or changed)
A/4b
Message data assimilated by receiving system
SAP information message generated by this system, and then sent to the TMS
Implicitly acts as a 'subscribe' request and that this organisation has a LR with the service user. (May also contain additional sharing consent declarations)
Local: security broker, legitimate relationship management, demographics service (and local-NHS identifier mapping)
GP Systems (with integrated or tightly interfaced SAP functionality)
Trust Systems (e.g. PCT, acute hospital, etc.) with integrated (or tightly interfaced 3rd party) SAP functionality
Social Services Systems (with SAP modules)
Other LA Systems (with SAP support and/or information sharing requirement/capability, e.g. Housing, Education, etc.)
NHS CFH Systems
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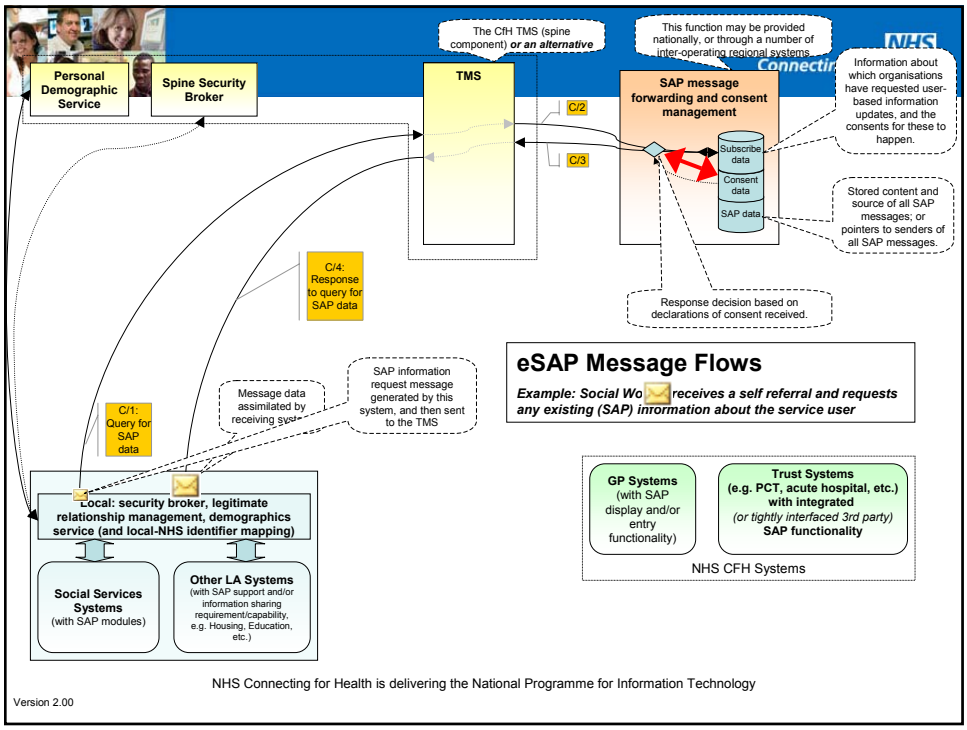
Version 2.00


The CfH TMS (spine component) or an alternative
This function may be provided nationally, or through a number of inter-operating regional systems
Personal Demographic Service
Spine Security Broker
TMS
SAP message forwarding and consent management
Subscribe data
Consent data
SAP data
C/2
C/3
Information about which organisations have requested user-based information updates, and the consents for these to happen.
Stored content and source of all SAP messages; or pointers to senders of all SAP messages.
C/4: Response to query for SAP data
Response decision based on declarations of consent received.
eSAP Message Flows
Example: Social Wo receives a self referral and requests any existing (SAP) information about the service user
Message data assimilated by receiving sys
SAP information request message generated by this system, and then sent to the TMS
C/1: Query for SAP data
GP Systems (with SAP display and/or entry functionality)
Trust Systems (e.g. PCT, acute hospital, etc.) with integrated (or tightly interfaced 3rd party) SAP functionality
Local: security broker, legitimate relationship management, demographics service (and local-NHS identifier mapping)
Social Services Systems (with SAP modules)
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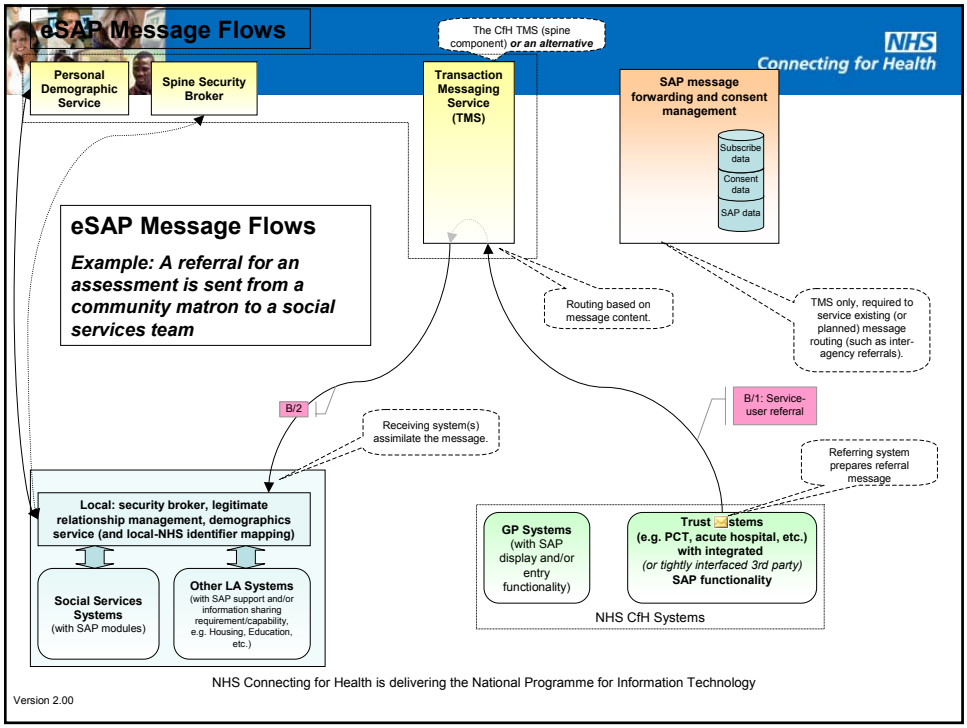

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Information Sharing Model:
Personal Demographics Service

For individuals to be identified and records updated correctly, where information is shared between systems using different identifiers.

- As all e-SAP information will be shared with the NHS, the model assumes that the NHS Number will be used as the common identifier ➔ NHS CFH Spine.
- For non-NHS agencies involved in SAP, an alternative could be to set up local PDSs to handle record-matching within a Local Authority area.

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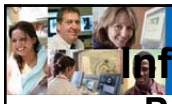
DISCUSSION



Information Sharing Model: Publish & Subscribe Service

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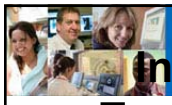
Functions of a Publish and Subscribe service:

- To send to other participating systems changes to a service user's details, subject to a record of the individual's consent being available.
- To record when a care professional starts an episode with an individual, so as to be notified of future changes in SAP information.

Three possible ways of accessing previously recorded SAP information:

- A copy of the information is held in the 'publish and subscribe' system.
- The publish and subscribe system holds pointers to the information, which is then 'pulled on the fly' and is collated in the publish and subscribe service.
- The publish and subscribe system sends pointers to subscribing systems, which pull the information and hold it directly.

DISCUSSION



Information Sharing Model: Transaction Messaging Service

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Queuing and routing the 'publish and subscribe' messages requires a Transaction Messaging Service.

- NHS CFH already provides a national TMS
- Other options will be explored, should this not prove suitable.

A directory of services is also required, to identify the organisations to which messages need to be sent.

- NHS CFH already provides a spine directory service (SDS) and use of this will be explored.

eSAP systems would need to be able to generate standard messages and to handle messages when they are received.

DISCUSSION

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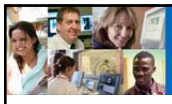

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Information Sharing Model: Consent

Processing individual consent to information sharing, SAP business requirements require:

- Consent being restricted to specific organisations, e.g. to NHS agencies but not social services.
- Consent being restricted to specific areas of the record, e.g. not sharing medication record with social services.

'Sealed envelopes' in the NHS Care Records Service restrict access to information deemed sensitive by an individual.

- Information held in a 'sealed envelope' would not be shared as part of SAP.

e-SAP systems would transmit updates to consent status to the publish and subscribe service

- which would filter all further requests for information against the consent status.

Information Sharing Model: Registration of System Users & Authentication

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System users from different organisations to be identified, registered and authenticated, in line with NHS Care Records Service requirements:

- A registration authority process, with registration of system users at an organisational level, requiring a rigorous process of identification.
- Authentication using a smart card or other level 2 authentication method.
- Implementation of 'legitimate relationships', i.e. users only able to access an individual's records, when having a direct care relationship with that individual.
- Implementation of the concept of 'role based access', i.e. that the system user can only access functionality (and hence information) appropriate to that role.
- An individual's consent to their information being shared by that organisation.

There are two options for managing system user registration

- a single central security broker service, used to authenticate all users.
- a 'federated' security broker system for non-NHS users, who would be registered and authenticated at a local system level:
  - based on a standard national process
  - complying with NHS Care Records Service information governance requirements

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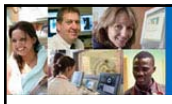

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Information Sharing Model: Information Exchange Standards

Many SAP communications are presently unstructured documents.

Some SAP transactions are structured, e.g. updates to demographic details, medical summary, or referral messages.

Three combinations are described below, all of which may need to be supported in relation to SAP information flows.

- ***A: 'Unstructured'*** – i.e. would contain a minimum set of structured data (e.g. identification information) the rest being in a human-readable format – e.g. a free-format Word document or PDF.
- ***B: 'Fully structured'*** – i.e. within a pre-defined (and potentially extensible) schema – but not necessarily a fully coded schema.
- ***C: 'Extensible Hybrid'*** – i.e. would include a minimum (mandatory) set of structured data, an optional unstructured element (per A), plus structured data in an extensible schema.

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Information Sharing Model: Schema Management Service

A national set of schemas will be defined and maintained for structured information sharing.

Schemas to be based on defined SAP processes, associated information items, definitions, coding etc.

This implies the need for a process and schema definition and management service.

DISCUSSION

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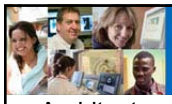

The Technical Model

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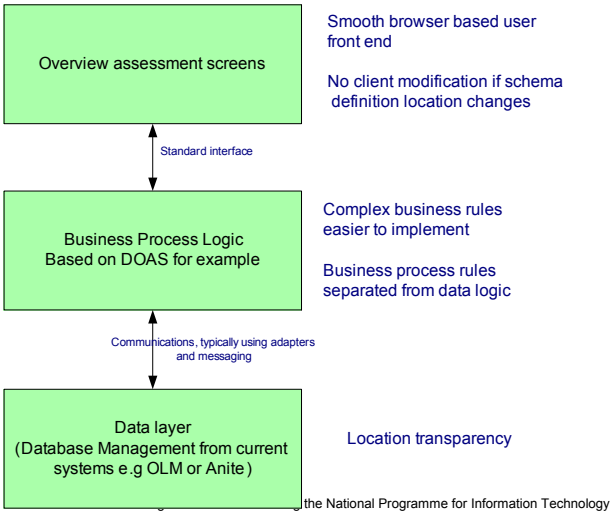
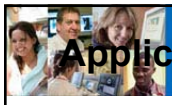
Architectural layers – (3-tier)





Application Integration – the Route Map

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Stage-1:

- Integrating modules in one organisation from one supplier.
- Proprietary tools from the supplier.

Stage-2:

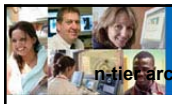
- Integrating applications in one organisation from several suppliers.
- 'Hub and spoke' – non-proprietary tools.
- Management issues:
  - Matching records between systems.
  - Applying changes from one system to the other systems – synchronisation.

Stage-3:

- Integrating applications across organisations from several suppliers.
- Multiple 'hubs and spokes' ➔ the 'axle'! (FAME)
- Some legacy applications still interact at the data level (Tier-3).
- Management issues:
  - Joint governance of information, systems and of interoperability standards esp. of messaging and data content.
  - Common service user / citizen indexing.

Stage-4:

- All applications migrate to using web-service architecture:
- A fully 'Service-Oriented Architecture'.



n-tier architecture using a Service Oriented approach to support eSAP

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Presentation tier – *client side*	End User's system – HTML, Forms etc.	Screen layouts, data items and reporting are described using XML Schemas.
Presentation logic tier *Server side*	Web Server Distributed logic Client interface	Fulfils requests from the user for information from the backend system, using an XML interface. Many eSAP systems use this method currently.
Applications Logic tier	Business objects and rules	New web based SAP applications written in Java or Microsoft .Net or other standard methods
Applications integration tier using the Service Oriented approach that enables the integration of services	Message Oriented Middleware (MOM) •Intelligent Routing, queuing •Publish / subscribe •Request / Response Data transformation (XML schemas) •Format, structure, semantic •Adaptors and "Wrappers" Event driven triggering Security Services Identity Management	Services would use standards-compliant interfaces, invoked by communications protocols which are independent of location and highly interoperable. This is known as an Enterprise Service Bus.
Data access tier	Existing applications & Databases	

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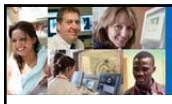
Questionnaire

Complete and return.

Disseminate for widest possible awareness and feedback.

CPA website for continuous feedback – please participate, via:

– www.cpa.org.uk/sap and then select 'eSAP'.



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Timetable (Re-cap)

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THANK YOU!

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