

 **eNitiatives**

ICAO ATN-AMHS
Directory Services Support
South Korea
May 2011



eB2Bcom Pty Ltd

Background

- Founded in 1997
- Specialists in identity and access management
- Developer and distributor of ViewDS since 2001

ViewDS

- Hierarchical Data Storage – X.500 specification
- Intra-attribute searching & approximate matching
- Standard Public Key Infrastructure (PKI) support
- Native XML support

Major Markets

- Government & Defense



Government National Award Winner

victoriaonline | The fastest way to find local, state and federal government information and services. State Government Call Centre **1300 366 356** Local Call Cost. **Victoria**

CONTACTS & SERVICES DIRECTORY Search Directory GO

Directory Home | **Government of Victoria** | Departments and Other Bodies | Parliament of Victoria | Courts and Tribunals | Advanced Search

You are here: Directory Home | Other Directories: Federal | Local

Departments and Other Bodies

- Department of Education and Early Childhood Development
- Department of Health
- Department of Human Services
- Department of Innovation, Industry and Regional Development
- Department of Justice
- Department of Planning and Community Development
- Department of Premier and Cabinet
- Department of Primary Industries
- Department of Sustainability and Environment
- Department of Transport
- Department of Treasury and Finance
- Ombudsman Victoria
- Victorian Auditor-General's Office

Parliament of Victoria

- Cabinet
- Members of the Legislative Assembly
- Members of the Legislative Council
- Parliamentary Committees
- Parliamentary Departments
- Parliamentary Parties
- Shadow Cabinet

Courts and Tribunals

- Children's Court of Victoria
- Coroners Court of Victoria
- County Court of Victoria
- Magistrates' Court of Victoria
- Supreme Court of Victoria
- Victims of Crime Assistance Tribunal
- Victorian Civil and Administrative Tribunal

PREMIER

CABINET

Government of Victoria

- Executive Council
- Office of the Governor
- Assistant Official Secretary
- Governor of Victoria
- Lieutenant Governor of Victoria
- Official Secretary

A-Z of Government Websites

A-Z of Government Services

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State Government of Victoria Date last reviewed: 12 August 2010



Agenda

Background

- ATNICG/5-WP/10 – 31/05/10
- ATNICG WG/8-WP/6 & WP/10 – 28/09/10
- ICAO Doc 9880
- Eurocontrol Spec 0136

Message routing

- ATN/AMHS address translation & routing tables

Directory services

- Belgian Comsoft directory service concept
- Local support for distribution lists and contact details

Proof of concept



Background-1

- ATNICG/5-WP/10 – 31/05/10
 - ❑ Recommended standard directory structure
 - ❑ Root directory service agent with regional support directories
 - ❑ Regional directory user agent access to remote directories
 - ❑ Provided 33 recommendations for directory operations and protocol element requirements
 - E.g. Strong authentication for directory access protocol & directory user agent transactions



Background-2

- ATNICG WG/8-WP/6 & WP/10 – 28/09/10
 - Reasons for deploying ATN directory services:
 - can be used to distribute, update and synchronise address translation data between ATN & AMHS
 - allow lookup and browsing of ATC object entries by operational and administrative staff
 - can support PKI for digital signatures for AHMS and other apps.
 - will provide more efficient & timely management of the data required to operate the AMHS & AFTN gateways.
 - Reasons for not using a directory:
 - only a few ANSPs are connected using AMHS
 - those that are want to gain more experience before committing to deploy the directory service – recognising the attendant difficulties



Background - 3

- ICAO Doc 9880 – Part II – ATS Message Handling Services
 - System description
 - ATSMHS Specification
 - AFTN/AMHS Gateway Specification
- ICAO Doc 9880 – Part IV – Directory Services Security and Systems Management
 - System level requirements
 - Object classes and attribute specifications
 - ATN directory schema
 - Directory protocols



Background - 4

- Eurocontrol Spec 0136
 - Has defined:
 - AMHS interoperability – basic ATSMHS and extended services
 - Directory use – architecture, schema, access, protocols
 - AMHS security
 - Transition/co-existence
 - Traceability and regulatory provisions



Main Directory Service Requirement

Message routing

- Resolve names between ATN & AMHS
 - Directory entry for each AMHS user
 - AFTN/AMHS gateway can resolve O/R addresses
- Manage distribution lists
 - Message servers can expand distribution lists to determine members
- Publish user attributes capabilities
 - Maximum message size etc.
- Support AMHS security
 - Maintain digital certificates



Additional Directory Service Capability

While the focus has been on AMHS routing and user capabilities support – directories can do much more:

- **Distribution list management**
 - e.g. MET office reports for local jurisdictions
- **Support for publishing contact detail**
 - Role & services directory for local airports
 - e.g. telephone contact detail for airline security personnel
 - IATA code match for ATN location
 - (either as a business process or interactive query)
- **Support for role management and workflow**
 - Perform adds, moves and deletes of persons from local administrative and operational groups
 - e.g. access approval to restricted areas
 - Directory service support for business automation

Directory Search

192.168.1.17/views/comsoft/webdua.cgi?aa1_lfz1000_120.&&

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CADIR COMSOFT ATN Directory Server

Welcome: Admin Comsoft (Logout) Quick Search:

Home Search Browse Change Password

Organization Search Person Search List Search MD Search Certificate Search

Please enter search details:

organizationName

atn-facility-name

Show Clear

W3C WAI-AA ATAG 1.0 Powered by ViewDS

Directory Search Results

192.168.1.17/views/comsoft/webdua.cgi?na0_lfz1000_120.

Singapore Travel eB2Bcom News Camera DBS NUS Communities Mailings Bikes Car Other bookmarks

CADIR COMSOFT ATN Directory Server

Welcome: Admin Comsoft (Logout) Quick Search: (cn=*)

Home Search Search Results Browse Change Password

Results

13 entries found for (cn=*)

organizationName	commonName	dnValue
	SNOWTAM DL	cn=SNOWTAM DL,c=CH
	Switzerland	cn=Switzerland,o=COMSOFT-Tentative-MD-Register
	United Kingdom	cn=United Kingdom,o=COMSOFT-Tentative-MD-Register
	Fricktal-Schupfart Supervisor	cn=Fricktal-Schupfart Supervisor,c=CH
	NOTAM DL	cn=NOTAM DL,c=CH
	France	cn=France,o=COMSOFT-Tentative-MD-Register
	AIP Services	cn=AIP Services,c=CH
	Admin Comsoft	cn=Admin Comsoft,c=CH
	Margaret Hunter	cn=Margaret Hunter,c=CH
	Germany	cn=Germany,o=COMSOFT-Tentative-MD-Register
	Andrew Sherman	cn=Andrew Sherman,c=CH
	EUROCONTROL CFMU	cn=EUROCONTROL CFMU,o=COMSOFT-Tentative-MD-Register
	Buochs Tower	cn=Buochs Tower,c=CH

W3C WAI-AA ATAG 1.0 Powered by ViewDS

Directory Search Results

192.168.1.17/viewds/comsoft/webdua.cgi?sa5_lfz1000_120.

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CADIR COMSOFT ATN Directory Server

Welcome: Admin Comsoft (Logout) Quick Search:

Home Search Search Results Browse Change Password

Results

2 entries found for Subject~"a"

Subject	Valid From	Valid Until	Serial Number
Andrew Sherman	2008-02-29 05:08:16Z	2010-03-28 05:08:16Z	938
Margaret Hunter	2008-02-29 05:06:20Z	2009-02-12 05:06:20Z	553

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Entry Details

192.168.1.17/viewds/comsoft/webdua.cgi?eb1_lfz1000_120.&person&817d6d5d-e6bf-4ab2-bc4e-a8ce9837d964

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CADIR COMSOFT ATN Directory Server

Welcome: Admin Comsoft (Logout) Quick Search:

Home Search Browse Change Password

- World
- o = DE
- o = EUROCONTROL
- o = EBBD
- o = EUCEB
- o = EUCH
- o = LFPY
- o = COMSOFT-Tentative-MD-Reg
- cn = EUROCONTROL CFMU
- cn = France
- cn = Germany
- cn = Switzerland
- cn = United Kingdom
- o = CH
- o = LS
- cn = NOTAM DL
- cn = SNOWTAM DL
- cn = Admin Comsoft
- cn = AIP Services
- cn = Andrew Sherman
- cn = Buochs Tower
- cn = Fricktal-Schupfart Supervi
- cn = Margaret Hunter

Admin Comsoft

commonName Admin Comsoft

description Directory Administrator

Full Entry Details Show Target Entry Set Target Entry Modify Entry Delete Entry

Assign Login

W3C WAI-AA ATAG 1.0 Powered by ViewDS

The screenshot shows a web browser window displaying the 'Entry Details' page for 'Germany' on the CADIR COMSOFT ATN Directory Server. The browser address bar shows the URL: 192.168.1.17/viewds/comsoft/webdua.cgi?ea0_lfz1000_120.&atn-amhsMD&0bdb63d4-a44a-41db-8ff5-613ebb7b. The page header includes the CADIR logo and navigation tabs A, B, C, D, E. Below the header, there is a 'Welcome: Admin Comsoft (Logout)' message and a 'Quick Search:' field. The main content area shows the 'General' tab selected, with a breadcrumb trail: organization = COMSOFT-Tentative-MD-Register -> atn-amhsMD = Germany. The title of the entry is 'Germany'. The details are as follows:

commonName	Germany
atn-global-domain-identifier	P=GERMANY,A=ICAO,C=XX;
atn-icao-designator	ED,ET
atn-amhs-addressing-scheme	caas
atn-amhsMD-naming-context	c=DE
modifyTimestamp	2010-04-28 15:55:22.577+1000

At the bottom of the details section, there are four action buttons: Show Target Entry, Set Target Entry, Modify Entry, and Delete Entry. The footer of the page includes a 'W3C WA2-AA ATAG 1.0' logo on the left and a 'Powered by ViewDS' logo on the right.

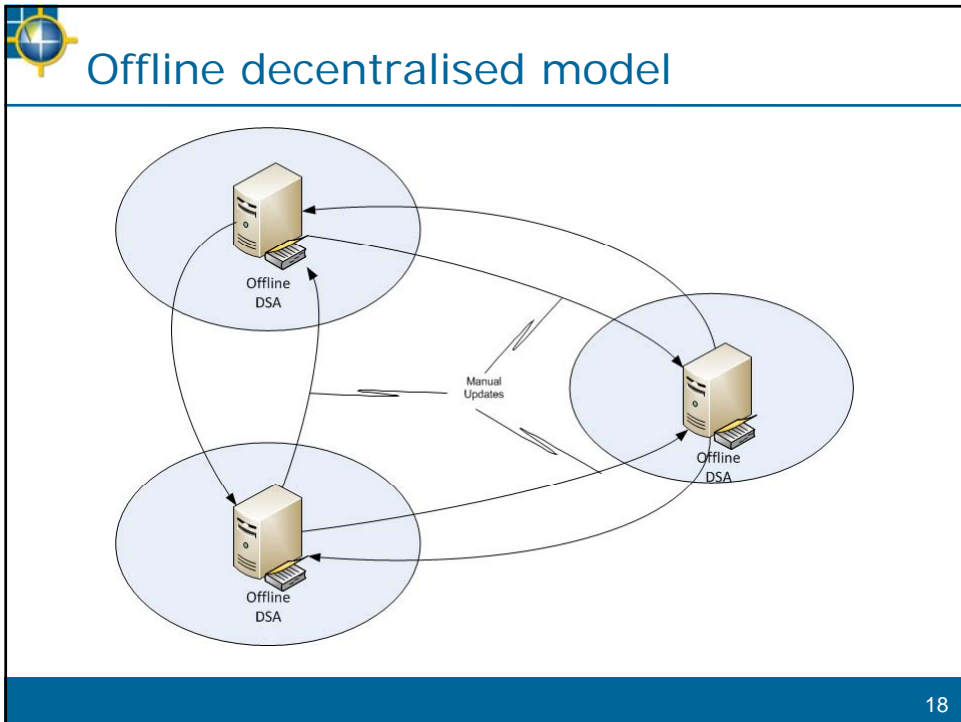
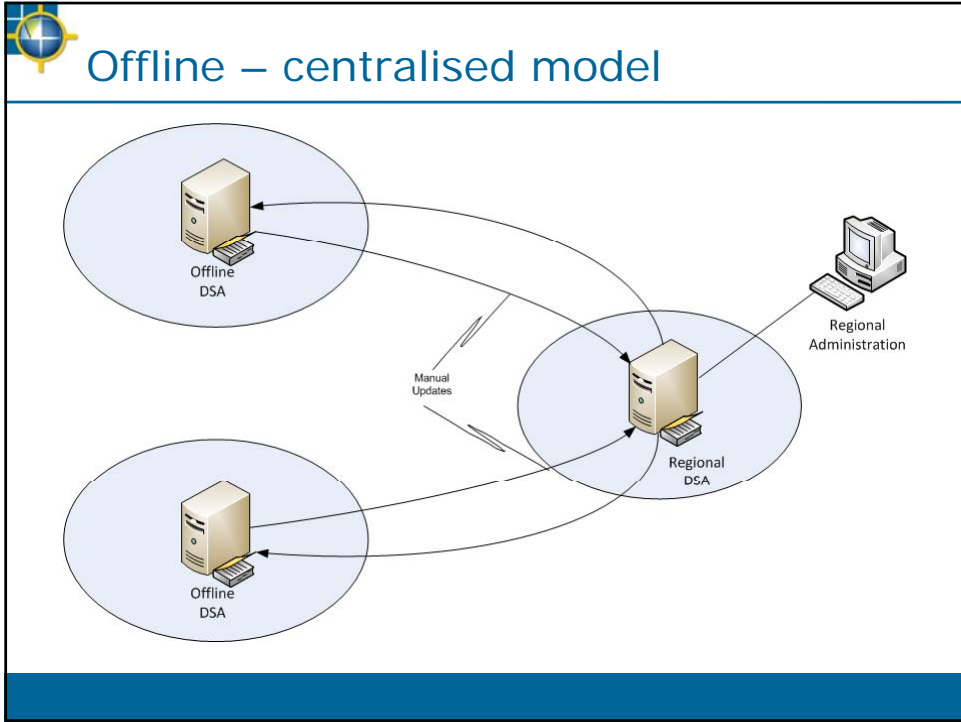
Issues

Directory service (DS) – AMHS Architecture:

- central vs. distributed management
 - should local COM offices update the DS?
- AIRAC schedule
 - how can migration to a real-time model be better accommodated?
- routing table distribution
 - should the DS control routing table changes?
- local use of the directory
 - what controls are required on local DS usage?

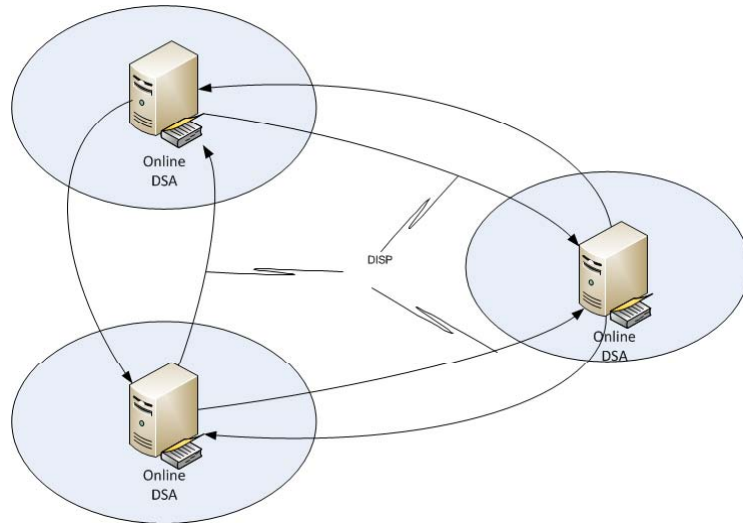
Architecture questions:

- Can both local and regional requirements be accommodated – what schema changes will be required?
- Proposed distribution model – manual? partial replication?
- Directory management – fully meshed or hub & spoke connectors to every DS in the region?





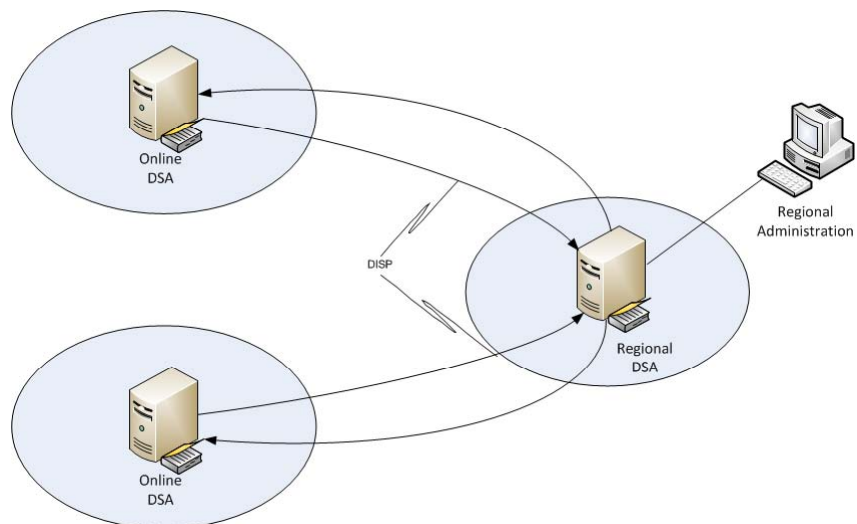
On-line decentralised



19



On-line centralised



20



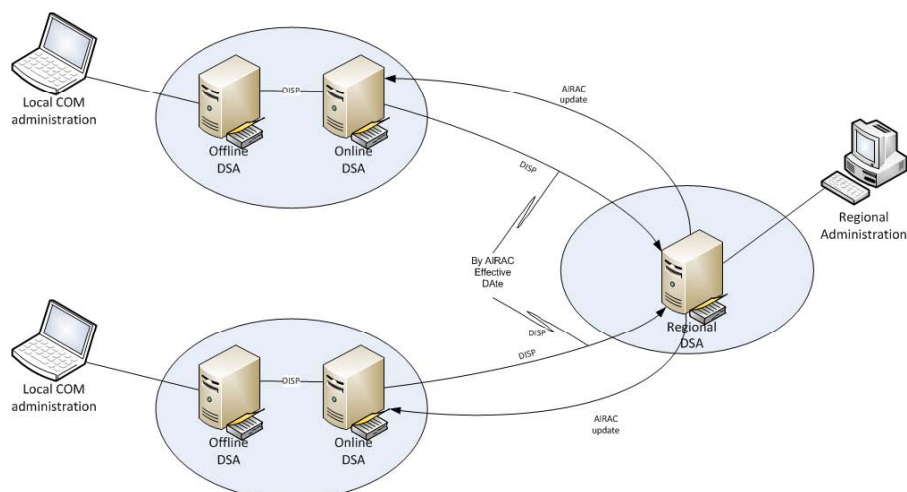
Proposal

Proof of concept

1. Develop planning document – alternate deployment models
 - review – survey participating jurisdictions
 - develop alternate deployment strategies
 - document project plan for implementation of the pilot
2. Establish an AMHS/DS installation at two jurisdictions
3. Deploy ICAO Doc 9880 DIT and schema
 - add local schema extensions
 - validate model for APAC deployment
4. Trial:
 - central and local DS management
 - replication of central and local changes
 - local & regional scope – decide replication/distribution (chaining) requirements



Configuration





Next Steps

- **Determine jurisdictions to be involved**
- **Establish project team**
- **Deploy PoC configuration**
- **Trial alternative DIT & schema designs**
 - Measure replication/latency times
- **Document shortcomings of current model**
 - architecture and schema/DIT
- **Report on recommended configuration**



Questions

<http://www.viewds.com>

