

**GOVERNMENT OF ANDHRA PRADESH
ABSTRACT**

IT&C Dept. – IT Architecture – Issue of mandatory guidelines on conformance to IT Architecture and standards while implementing major IT projects – Orders – Issued.

INFORMATION TECHNOLOGY & COMMUNICATION DEPARTMENT

G.O. Ms. No. 40

Dated 14.8.2001.

ORDER:

1. Having undertaken multiple initiatives to use IT as a strategic tool to provide improved services to the citizens the government has found it essential to define standards and guidelines on IT Architecture and Information Systems to derive the following long-term benefits in implementation of e-Government projects.

- Conformance to open, international technical standards
- Interoperability of applications developed by various departments / agencies within the State / Country / globally.
- Avoidance of duplicate / unproductive coding.
- Creation of scope for data sharing across agencies and services to provision of integrated citizen and business.

2. Accordingly, technical standards and guidelines on IT Architecture, have been recently defined in close coordination with Price WaterHouseCoopers, published on the IT&C Department's website (www.ap-it.com) and have also been communicated to major IT companies and all Government departments. The recommendations on IT architecture contain the following:

Technical Component (1)	Principles (2)	Technical Topics (3)	Best Practices (4)	Guidelines (5)	Standards (6)
Application	3	2	11	-	4
Information	4	6	17	-	4
Gr. Ware	2	4	15	-	17
Component Ware	6	3	7	-	6
Data	3	5	39	-	9
Middleware	9	2	5	-	4
Integration	8	3	11	8	1
Network	4	3	11	5	4
Platform	6	3	8	5	9
Security	6	6	12	5	18
Accessibility	5	4	18	8	3
TOTAL	55	40	154	31	79

3. In order to derive maximum benefit from these recommendations on IT Architecture, it is felt necessary that the standards, guidelines and best practices referred to above be followed scrupulously in the implementation of all e-Government and IT projects within the Government.

4. Government after careful consideration of the above, hereby issue the following instructions:

- (a) These orders shall apply to and be implemented by all Departments and agencies of the Government and Public Sector undertakings, implementing IT projects, including the projects in the pipeline.
- (b) The standards specified in column (6) of the table in para 1 shall be complied with mandatory, while the best practices and guidelines referred to in columns (4) and (5) shall be followed to the best extent possible.
- (c) The departments / agencies implementing any IT project are required to include a clause mandating 'Conformance to IT Architecture and Standards' in the technical specifications and IT architecture of the software solutions in all the tender schedules / RFPs / enquiries in future. This would imply that the solution recommended by the software / hardware / networking vendor / system integrator / consultant should conform to and comply with the specified standards and guidelines.
- (d) The guidelines include a checklist that is to be issued to the bidders to give details about conformance to standards and guidelines.
- (e) The departments shall also reserve the right to suitably advise successful vendors / solution providers during the course of software development and implementation of the project, to get the system audited by an independent IT consultant so as to ensure compliance with the prescribed standards and guidelines. In case of any deviation, the vendor shall be required to rectify the same at their own cost within the period stipulated for the same.
- (f) While evaluating the tenders / RFPs, all the departments would ensure that the successful bidder agrees to comply with the standards and guidelines. During the course of implementation of major IT projects this should also be ensured through continuous interaction. The software / hardware / networking systems may be got audited by an independent IT consultant in respect of all major IT projects.

5. Annexure "A" to this order lists the important standards, best practices and guidelines to be followed during implementation of major e-Governance Projects for ready reference. Since this list is illustrative the departments may refer to the full text available at www.ap-it.com.

6. Annexure "B" defines the 'Metadata' for common data elements likely to be used in various projects. These form just the initial set of 'Metadata' in the Central Metadata Repository (CMR) and further orders on Metadata for additional data elements will be issued from time to time. All departments / agencies / PSUs

designing new IT projects shall insist on defining the data in terms of the specifications contained in the CMR.

7. To ensure proper compliance, the officer approving the format of any tender / RFP should ensure the following:

- (a) Whether conditions mentioned in paras 3 & 5 figure in the tender document;
- (b) Whether the important standards / best practices / guidelines are insisted upon for compliance in the solution proposed by successful bidder; and
- (c) Whether the metadata standards found in CMR are strictly adhered to.

8. Government have also decided that the major projects being implemented should be audited by a third party with regard to compliance with the overall architecture and the concerned department, with the help of the auditor, should come up with a set of recommendations for rectifying the deviations, particularly in case of large projects like MPHS, Treasuries and CARD Projects.

9. The above orders shall come into force with immediate effect. These standards and guidelines will be reviewed every year or more frequently as required to ensure continued conformance to global standards.

10. Standards and guidelines relating to IT architecture are made available on the web at www.ap-it.com .

11. A copy of this order is available on the Government Website www.ap-it.com and also at www.apts.gov.in/apgos

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

PV Rao

Chief Secretary to Government

To

All Secretariat Departments,
All the Heads of Departments,
All the PSUs.

The Accounts General, (Audit), Andhra Pradesh, Hyderabad
The Account General (A&E), Andhra Pradesh, Hyderabad,
The Pay and Accounts Officer, Andhra Pradesh, Hyderabad
Copy to:

The Spl. Secretary to CM., IT&C Dept & EOS to Govt.

The P.S. to C.S.

The IT Advisor.

The President, HySEA.

Major IT Companies in India

S.F/Spare

//FORWARDED BY ORDER//

SECTION OFFICER

Annexure – A

(PI see para 4 of G.O.MS No.40 of IT&C Dept, dated 14.8.2001)

Some of the mandatory standards to be followed in the implementation of major e-government projects

(ILLUSTRATIVE LIST ONLY. FIND EXHAUSTIVE LIST AT www.ap-it.com)

1. Design for the N-tier service oriented architecture. Application developed shall adhere to 3-tier or N-tier architecture.
2. A Server – based ODBC solution shall be implemented rather than a workstation-based ODBC implementation.
3. The following file formats shall be used

Typical document input source	Typical Application Software used	File format Standard
Non-editable documents	Word Processing Imaging Systems World Wide Web Publishing	PDF
Monochrome documents or drw	Word Processing Archive & Retrieval Work flow Multimedia Digital Publishing Pattern Recognition Geographic Information Systems	TIFF using CCITT/ITU Group IV compression
Colour documents, drawing or photographs	Multimedia Word Processing Digital Publishing Pattern Recognition Geographic Information Systems	GIF JPEG
Facsimile documents	Word Processing Archive and Retrieval Workflow	TIFF using CCITT/ITU Group III compression
Multimedia images	Multimedia	MPEG

4. TCP/IP shall be the standard protocol technology
5. Simple Mail Transport Protocol (SMTP), Multi-purpose Internet Mail Extensions (MIME), and SNMPv1 (simply called SNMP) protocols shall be used.
6. SSLv3 and IPsec protocols shall be used for confidential communications.

7. Generic Security Services API (GSS-API) or Common Data Security Architecture (CDSA) compliant API calls and products shall be used.
8. Centralized Metadata Repository (CMR) shall be created to store centralized metadata.
9. Custom systems shall comply with existing Centralised Metadata Repository standard data element definitions.
10. Databases shall use a relational DBMS supporting ANSI-standard SQL.
11. OLE DB or JDBC database access middleware should be used when accessing a database.
12. Use of the service broker shall be made for inter-application communication
13. Use either SCSI or FC-AL technology for disk drive interface.
14. Conformance to the interface specifications of the Workflow Management Coalition shall be adhered to in respect of workflow systems.
15. Distributed application servers shall be run on platforms supporting "open" operating systems.
16. Services provided through the Internet (Web-enabled applications, FTP, Mail, News, DNS, etc) shall be placed on the DMZ or proxied from the DMZ.
17. DNS (domain name system) shall be used for databases that are accessible through TCP/IP.
18. Conformance to the Document Management Alliance Specifications (DMA 1.0 & ODMA 2.0) shall be adhered to in respect of document management systems.
19. XML shall be used in respect of content that requires further automated processing
20. RAID with fault-tolerance shall be used in the storage subsystems.
21. SAN based channel technology shall be used for large-scale storage deployments running mission-critical applications.

Annexure 'B'

(Pl. See para 5 of G.O.Ms.No.40, IT&C Department, dt.14-8-2001)

Centralized Metadata repositions (CMR) of Govt. of Andhra Pradesh

Definition of Standard and Data Elements

Data Element Attribute Name	Element Definition	Field Length	Data Element Type	Example	Remarks
Person Related Elements					
*SSID	Social security identification number	12	Number	9999-9999-9999	Unique number for each person as per MPHS database
Surname	Person's surname	20	Varchar	Mullapudi	
Name	Person's name	30	Varchar	Subba Rao	
Father / Husband's Surname	Father / Husband's Surname	20	Varchar	Mullapudi	
Father / Husband's Name	Father / Husband's Name	30	Varchar	Venkata Rao	
Date of Birth	Person's date of birth	8	Date	12-09-1965	DD-MM-YYYY format
Sex	Sex of the person	1	Char	M	Male / Female Flag
Caste Category	Caste category of the person	3	Varchar	01	SCA,SCB,SCC,SCD, BCA, BCB, BCC, BCD, ST, OC, OBC
Religion	Religion of the person	20	Varchar	Hindu	
Religion Code	Religion code of the person	02	Varchar	01	Codified field with name displayed
Marital Status	Marital status	01	Varchar	Y	
STD Code	STD code of the area	06	Varchar	040	
Phone No.	Contact phone no.	08	Number	4036409	
Fax No.	Fax no.	08	Number	4030103	
E-Mail ID	Electronic mail id	50	Varchar	mullapudi.subbarao@yahoo.com	Electronic mail id
PAN No.	Permanent Account Number of the person	10	Varchar	ABTPR2507M	Number allotted by Income Tax Dept
Location Related Elements					
Address1	Persons address first line	50	Varchar	205, Annapurna	First address Field

				Apts.,	
Address2	Persons address second line	50	Varchar	Street No. 5, Srinivasa Colony	Second address Field
District	District name	20	Varchar	Ranga Reddy	As per Janmaboomi
District Code	District code	02	Varchar	02	
Mandal	Mandal name	20	Varchar	Saroor Nagar	
Mandal Code	Mandal code	02	Varchar	05	
Village	Village name	20	Varchar		
Village Code	Village code	20	Varchar		
Municipality	Municipality	20	Varchar	L B Nagar	
Municipality Code	Municipality name	02	Varchar	02	
Municipal Ward Code	Municipal Ward Code	03	Varchar		
Panchayat	Panchayat	20	Varchar		
Panchayat Code	Panchayat Code	02	Varchar		
Habitation	Habitation	20	Varchar		
Habitation Code	Habitation Code	02	Varchar		
PIN Code	PIN code of the area	06	Varchar	500035	
Department	Department name	50	Varchar		
Department Code	Department code	04	Varchar		Codified field with name displayed
Survey No.	Survey no. of property	30	Varchar	12/24/345/496-a1	Survey no. where property is located
ID's					
Vehicle Reg. No.	Vehicle registration no.	10	Varchar	AP37AX8420	Number as allotted by RTA
Passport No.	Passport no. of the person	08	Varchar	A1155679	Number as issued by Passport authority
Driving License No.	Driving License no. of the person	20	Varchar	AP37/4235/BV RM/99	Number as allotted by Licensing authority

For Storage in Telugu (ISCI)

Surname	Person's surname	20	Varchar	ª«sVVIIÁpx msp²T¶	
Name	Person's name	30	Varchar	xqsVËØ÷L Sª«so	
Father / Husband's	Father / Husband's	20	Varchar	ª«sVVIIÁpx msp²T¶	

Surname	Surname				
Father / Husband's Name	Father / Husband's Name	30	Varchar	®ªsLiNRPE Á LSª«so	
Address1	Persons address first line	50	Varchar	205, @©«sõxms pLñRi @FyL`íi®ªs VLiÉP=	First address Field
Address2	Persons address second line	50	Varchar	{qísûÉP ©«sLi.5, \$-sªyxqs NSiÁ~ds	Second address Field
District	District name	20	Varchar	LRiLigSiLi²i T¶	As per Janmabhoomi
Mandal	Mandal name	20	Varchar	xqsLRiWL`i ©«sgRiL`i	
Village	Village name	20	Varchar		
Municipality	Municipality name	20	Varchar	FsÍP. ÓÁ. ©«sgRiL`i	
Panchayat	Panchayat name	20	Varchar		
Habitation	Habitation	20	Varchar		

* At present the SSID No. is with the following structure and it is planned to migrate to the arrangement specified above. The detailed guidelines regarding migration from the existing to the recommended SSID will be issued separately.

SSID	Social security identification number	16	Number	XX-XX-XX- XXX-XXXXX- XX XX-XX-XX- XXX-XXXXX- XX (Dist-Mandal- Municipal- Village/Ward - Household- Member of HH)	Unique number for each person as per MPHS database
------	---------------------------------------	----	--------	---	--