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## GOVERNMENT OF KERALA

### Abstract

INFORMATION TECHNOLOGY DEPARTMENT—C-GOVERNANCE INITIATIVES IMPLEMENTED BY  
GOVERNMENT DEPARTMENTS AND ORGANISATIONS—GUIDELINES ISSUED

### INFORMATION TECHNOLOGY (IT) DEPARTMENT

G. O. (P) No. 24/2009/ITD, Dated, Thiruvananthapuram, 29th September, 2009.

Read —

- 1 G O (Ms) No. 3/2000/ITD dated 22-2-2000
2. G O (Ms.) No 30/2003/ITD dated 21-8-2003
- 3 G O (P) No 26/2005/ITD dated 24-12-2005
- 4 G O (Ms) No. 1/2006/SPD dated 2-2-2006
- 5 G O (Ms) No. 28/2008/ITD dated 26-7-2008
- 6 G O (Ms) No 31/2008/ITD dated 21-8-2008
- 7 Circular No 2890/B1/2008/ITD dated 25-9-2008
- 8 G O (Ms) No .461/2008/ITD dated 16-10-2008
- 9 G O (Rt) No 233/2008/ITD dated 30-10-2008
- 10 Circular No 798/B1/09/ITD dated 24-2-2009
- 11 Circular No 5279/B1/108/ITD dated 21-5-2009

### ORDER

Several Government Departments and Organisations are in the process of implementing e-governance initiatives. It has been seen that in several cases the e-governance initiatives have not been successful, leading to either expenditure incurred going waste or not full value being generated from it. In some cases, several instances of same application being developed by different Government Departments and/or Government organisations have come to notice. This is extremely serious. On one hand it implies that manifold expenditure is incurred in developing a given resource. On the other, it also complicates future efforts of interoperability due to lack of standardisation, and difficulties in the sharing of data and applications across Departments and Organisations.

As part of the funding by Government of India under the National e-Governance Programme (NeGP) and under the State Plan and non plan, significant funds are proposed to be spent in the coming years for e-governance. Therefore, unless the issues mentioned above are addressed, it may lead to huge loss of Government resources.

Certain common IT infrastructure has been created by Kerala State IT Mission. These include facilities like Citizen Call Centre, development of CMF based websites for Government Departments, official e-mail facility, use of Akshaya for delivery services at the last mile, FRIENDS for payment of bills, MapInfo of Government offices based on Integrated Government Service Gateway (IGSG) etc. Even by availing the common IT infrastructure, e-governance activities can be initiated by a Department without incurring major expenditure. Yet it has come to notice that many Departments are not using the services of the common IT infrastructure.

To mitigate these and other related issues, Government are pleased to order the following guidelines laying down the broad procedure that should be observed for undertaking e-governance initiatives by Government Departments and Government organisations including PSUs, Government societies, Co-operative societies, statutory bodies and LSG institutions. Government further order that it would be essential for all Total Solution Providers (TSP) identified by Government as per G.O. read as 1st above, to follow these instructions scrupulously. Failure to do so shall result in revocation of their TSP status.

#### **Appointment of a Nodal Officer**

Each Department/Organisation should appoint a Nodal Officer for a project. The Nodal Officer need not be from the IT Division but should necessarily be the owner of the process, which are proposed to be computerised. The Nodal Officer should preferably be not more than one level below the Head of Department/Organisation. In any case, the Head of Department/Organisation should play an active role in the formulation, sanction and implementation of any e-governance proposal. This is extremely important because e-governance projects involve "change management" which would invariably require proactive leadership from the top-management.

## Development of a Proposal

All proposal for e-governance should invariably have a detailed **Project proposal**. The detailed proposal may be prepared by an Agency which may be anyone of the following:

- (i) *Inhouse with the help of IT Division, created as per order read as 5th paper above*
- (ii) *A TSP, as per order read as 1st paper above*
- (iii) *A professional consultancy agency selected through a transparent process*

In the event of option (ii) or option (iii) is followed, a detailed Service Level Agreement (SLA) should be signed with the Agency, clearly specifying in detail the scope of the work, the deliverables with time schedule, the monitoring mechanism for supervising the service levels, penalties for failure to deliver as per the prescribed SLAs and other requirements as specified in these guidelines.

### **The Project Proposal shall consist of the following documents**

- (1) *User Requirements Specification (URS) and Functional Requirements Specifications (FRS)*
  - (a) This URS document should define the user requirements exhaustively. All legal and regulatory requirements of the business shall be fully addressed in the URS. The URS should invariably be citizen focused and services delivered using the proposed system should be clearly spelt out. Ideally the URS shall be prepared by a group of functional experts from within the organization
  - (b) The URS should clearly state the services which would need to be delivered after the successful implementation of the e-governance initiative and the service levels thereof. Department/ Organizations may note that services need not be confined to the extant services through manual services, but it is always possible to provide new services, with more information which adds to the overall citizen delivery. For example, in an on-line system, the status of number of applications received so far for a particular position can be informed at the time of submission of application without any additional effort. Departments/Organizations should imaginatively seek to provide existing and new services to citizens through the e-governance project
  - (c) The URS should include service delivery through multiple channels viz. Internet Akshaya and mobile (wherever feasible)

(d) The services and service levels to be provided through the application should be approved by Government in consultation with IT Department for all new applications or for modifications of existing applications. A Government order clearly specifying the services and services levels shall be issued by the Administrative Department before taking up the application development

(e) The desired outcome pursuant to the e-governance project should also be spelt out

(f) The justification of the proposal should be incorporated based on either on the revenue generation or based on the cost reduction or based on better service delivery. Wherever possible, better service delivery should be in quantifiable measurable terms

(g) In case the Department/Organization does not already have a website based on FOSS Content Management Frame work, this should invariably be included as a part of the initial e-governance activities of the Department. All websites should have facility to provide location information regarding the offices of the Departments/Organizations through a map info facility called Integrated Service Delivery Gateway which is available with KSITM. Wherever feasible, the website should be bi-lingual, in Malayalam and English

(h) The websites of Government Departments should invariably be migrated to State Data Centre in terms of the circular read as 7th above

(i) In case the Department has significant public interaction, and is not using the Government Citizen Call Centre (CCC), the services of use of CCC should invariably be part of the URS

(j) All officers of the Department having network facility (either to KSWAN or to Internet) should invariably be provided official e-mail id

(k) Other common IT infrastructure which is available should be made use of as part of e-governance initiative of the Department

(l) The URS shall be converted into FRS which will address the issue of how the URS would be achieved

(m) It is observed that there is tendency among Departments/Organizations to go for automation of existing processes as a solution. However, Departments and Organizations should specifically note that the benefit of e-governance is often possible only with associated process reforms.

Therefore, wherever, use of Information Technology permits, the process reform which is practically feasible should be included in the proposed FRS. Ideally, the FRS should be developed by the functional group within the organization which had developed the URS along with the agency which is entrusted with the work of developing the Detailed Project Proposal

(ii) *Technical Analysis and Alternatives*

- (a) Based on the User Requirements Specification, a technical analysis shall be carried out and different possible alternatives evaluated (E.g. Connectivity options; Operational platform such as OS, RDBMS etc) The Risks, Threats and Vulnerabilities associated with each of these alternative options shall be identified and analyzed. For example, if the solution is web based, the vulnerabilities of the Internet can be exploited by the hackers and the system can be intruded
- (b) The common IT infrastructure already available should be utilized instead of creating new ones. Interoperability of operating systems and standardization needs to be ensured. Therefore, it is essential that the technical solution proposed by the Department should invariably have the approval of IT Department. The possibility of utilizing the existing applications and solutions within the Government shall be considered. Wherever the requirement relates to software already standardized by KSITM, that software shall invariably be used. The standardized software may be customized to meet the needs of the user Department/Organization. Presently, the following software has been standardized for Government Departments
  - (i) Personnel Management and Payroll Software—SPARK
  - (ii) Workflow software MESSAGE
  - (iii) File tracking software IDEAS
- (c) Wherever, the requirement does not involve standardized software but a similar solution has been developed by another Government Department or another Government organization, the possibility of using the same in the instant case should be examined in detail. In case it is decided not to use the existing software, the technical analysis should make out a clear case why this should not be done.
- (d) However, if the software requirement is such that the same has not been previously developed, the question of 'make or buy' shall also

be considered. If some of the modules needed have been developed earlier and other modules have not been developed, the issue of make or buy should be made with respect to those modules only.

- (e) As regards Malayalam databases and applications, only Unicode compatible fonts shall be used as stated in the order read as 6th above
- (f) Based on the technical analysis, the Agency shall prepare a System Requirements Specification (SRS) which shall form the basis of application development

(iii) *Implementation Plan and Funding*

- (a) An Implementation Plan with time schedules shall be prepared by the Agency Ideally there shall be pilot implementation phase followed by a planned roll out. The plan shall also include a scheme for training.
- (b) Based on the scope of the implementation, the Agency shall prepare an estimate for implementation. The estimate should be based on "Total Cost of Ownership" (TCO) and it should include costs relating to
  - (i) Hardware and networking needed for the implementation. This should include requirements at the user level as well as server hosting requirements for application and the databases
  - (ii) Site preparation "expenses"
  - (iii) Software development/procurement as the case may be
  - (iv) In case, the software is being developed, the cost of software testing by a third party like STQC or other CERT-IN empanelled auditors
  - (v) Necessary security systems—both hardware and software
  - (vi) Site development charges.
  - (vii) Training and change management
  - (viii) Connectivity charges for at least the project implementation period
  - (ix) Business Continuity Plan
  - (x) Manpower charges, if any, such manpower is proposed to be engaged as part of the implementation.
  - (xi) Data entry charges for archival data. It is expected that current data entry shall be done by existing employees
  - (xii) Handholding cost during initial period of implementation
  - (xiii) Provision for meeting recurring expenses for first three years of the project. This may include post-implementation requirements like project maintenance, back-up plans etc

- (xv) Any other expenses which may be required for complete and successful implementation
- (c) The justification of the proposal should accompany any proposal based on either on the revenue generation or based on the cost reduction or based on better service delivery. Wherever possible, better service delivery should be in quantifiable measurable terms.
- (d) The possibility of providing paid services may be examined by the Department/Organization. This would be specifically relevant for the sustainability of the project as well as its future roll-out.
- (e) The funding of the project is possible in several ways, including—
  - (i) State Plan as per Plan write-up and description
  - (ii) Mission Mode Projects under NcGP funded by Department of Information Technology, Government of India. For example, State Data Centre, Kerala State Wide Area Network, Capacity Building etc
  - (iii) Mission Mode Projects funded by Line Ministries of Government of India
  - (iv) PPP model. For example, KSWAN, Motor Vehicles Department, Akshaya etc
- (f) Government of India funds should be tapped to the fullest extent for e-governance projects as far as possible
- (g) An appropriate source of funding may be identified and Administrative Sanction as per laid down procedure should be obtained for implementation, as per orders read as 2nd and 8th above. Since several e-governance projects are crippled due to want of funds, it is necessary that the concerned Government Department/Organizations should have identified adequate funds for the project

#### Software Application Development

After the proposal has been formally sanctioned with the concurrence of IT Department, the software application development process should begin

- (a) Based on the administrative sanction, applications which have been identified in the FRS above shall need to be developed in a systematic manner. This would include applications which are to be developed a new as well as applications which have to be customized to the specific needs of the Department/Organization

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- (b) The systematic development process shall have the following steps
  - (i) Creating detailed System Requirement Specifications (SRS) as mentioned above.
  - (ii) Design and Coding of the Application Software.
  - (iii) User Acceptance Testing
  - (iv) Third party testing
- (c) In case of software procured off-the shelf, or using software which is already standardized by KSITM or a software which has been developed by another Government Department/Organization, the phases of Design and Coding will be absent. Instead, there may be a configuration phase
- (d) Development or procurement of Software involving a third party shall be arranged through a transparent process. The quotation shall be invited based on the following documents
  - (i) FRS including integration with existing software wherever relevant
  - (ii) Detailed Technical Architecture.
  - (iii) Implementation plan for the software.
  - (iv) Information Security Policy (KSITM has prepared an Information Security Policy based on draft published by CERT-IN. Departments/Organizations can either use the same or a modified version to suit their individual requirements)
  - (v) e-governance standards and Inter Operability Framework recommended by Department of IT, Government of India
- (e) There shall be a pre-qualification process to short list the vendors for software acquisition for all major or critical or sensitive e-governance projects. Cost comparison among various solutions shall include cost of all licenses necessary for the solution
- (f) The deliverables shall be
  - (i) System Requirement Specifications (SRS)
  - (ii) Application Software
  - (iii) Fully documented Source Code (Hard Copy as well as Soft Copy)
  - (iv) All necessary Licenses wherever applicable.
  - (v) User manuals
  - (vi) Training Materials
  - (vii) Detailed Acceptance Test Plan based on the SRS with test date

(g) *Service Level Agreement (SLA):*

A detailed Service Level Agreement (SLA) shall be signed with the third party covering all aspects of the Development, Implementation and maintenance of the software. The SLA shall have provisions pertaining to probable changes to SRS during the Acquisition as well as changes to the software after implementation. The strategy and infrastructure for the Maintenance of the Application during its entire life period shall be planned in advance. The SLA should also clearly define the duration of the Maintenance contract and the role of the solution provider during maintenance. Define a change management procedure and ensure that changes are controlled in line with the procedure. The SLA shall define time frames for each task during Acquisition, Implementation and Maintenance.

(h) *Acceptance Testing.*

- (i) The Acceptance Test Plan (ATP) shall be ready by the time the Application Software is developed. The test plan shall include sample data for testing and the expected results. Ensure that the plan is approved by all relevant parties. Establish a secure test environment for testing the Application. This facility can either be in-house or out sourced.
- (ii) The test environment shall be segregated from the Development and the Production environment. The Acceptance Testing shall be conducted by a team of functional experts nominated by the IT Division of the Department/Organization.
- (iii) The software developer shall not do the Final Acceptance Testing. The Final Acceptance Testing should be conducted by a Third Party who is a professional testing agency. The testing may be arranged through a fair and transparent tendering process. The Agency may be requested to facilitate identification of a suitable Third Party Testing Agency. The basis of the tendering process shall be the SRS and the Acceptance Test Plan already finalized. Ensure that business process owners and IT stakeholders evaluate the outcome of the testing process as determined by the test plan. Rectify errors identified in the testing process, having completed the suite of tests identified in the test plan and any necessary regression tests.

(i) *Intellectual Property Rights (IPR) :*

- (i) IPR for all the custom developed Application Software, unless it is in the free and open source domain, shall be with the procuring Department/ Organization. Any change to this condition should have prior concurrence of the Government.

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- (ii) The source Code with complete documentation shall be transferred to the organisation and kept in safe custody of the IT Division of the Department/Organization. A clause to this effect shall be included in the agreement for development of the software.
- (iii) Procurement of a standard Application Software: Wherever possible, only Free and Open source based software should be used for all Government and Government organizations. In case of procurement of standard Application Software off-the-shelf, then all the necessary information such as configuration and customization details, Application parameters etc. shall be documented and kept under the safe custody of the IT Division of the Department/Organization. A clause to this effect shall be included in the agreement for procurement of the software.

(j) *Upkeep of Documentation.*

All documentations such as the URS, FRS, SRS, Design Documents, Change Control Documents Training Materials, Source Code etc shall be kept under safe custody of the IT Division of the Department/Organization. The IT Division of the Department/Organization shall have persons familiar with the above documents so that maintenance and change management are carried out without hassles

*Implementation*

The actual implementation of the project in the work processes shall follow the following general steps.

- (a) *Procurement of Hardware and other goods and services.*
  - (i) Other IT resources, such as hardware, networking equipment, system software and services, needed to run the Application shall be procured based on a fair and transparent competitive tendering process. Proprietary and non-standard solutions shall be avoided to the extent possible. The technical specifications shall be carefully drafted by the Agency to avoid vendor locking and shall be verified and vetted by a technical committee consisting of experts from relevant fields.
  - (ii) Procurement of hardware shall be scheduled in such a way that the installation is completed along with the completion of the Acceptance testing of the hardware.
  - (iii) Once the software has been developed and tested, implementation shall begin. The implementation shall be either entrusted to the Agency associated with development of the project or with the software developer. In either case, the implementation responsibility should be clearly spelt out in the SLA signed in this regard.

(iv) Necessary orders will be issued by the Department/Organization concerned to bring into effect the process changes which are envisaged as part of the e-governance initiative.

(b) *Training.*

- (i) All users and stakeholders of the new system shall be imparted knowledge about the new systems. There shall be adequate documentation and manuals for users. Training shall be provided to ensure the proper use and operation of applications and infrastructure.
- (ii) There shall be separate Technical and Operational documentations pertaining to the Information Systems. These documentations shall enable all those who will operate, use and maintain the automated solutions to exercise their responsibility.

(c) *Parallel Operation*

Run the system in parallel with the old system for a while, and compare behavior and results. The parallel run can be discontinued after the system is stabilized and proper Disaster Recovery and Business Continuity Plans are in place.

**Utilisation of Common State Level Infrastructure:**

As a general rule, no e-governance initiative should plan for any of the following which are common IT infrastructure available to all Government Departments free of cost and to commercial Government organizations at a nominal cost. These include:

- (i) State Data Centre
- (ii) Citizen Service Centres (kiosks), State-wide CSCs exist in the form of Akshaya Centres
- (iii) Networks including Kerala State Wide Area Network, SecWAN
- (iv) Citizen Call Centre
- (v) Official E-mail Facility
- (vi) Video-conferencing facility

Other common IT infrastructure which is presently under development are

- (i) Departmental WANS in Vikas Bhawan and Public Building
- (ii) Civil Station WANS
- (iii) E-procurement
- (iv) State Spatial Data Infrastructure
- (v) Public Key Infrastructure (for digital signatures)

- (vi) Mobile Infrastructure for providing mobile services
- (vii) GIS based mapinfo of Government offices (IGSG)
- (viii) Touch screen kiosks
- (ix) e-District
- (x) State Service Delivery Gateway

#### Concurrence of IT Department

Vide Government order read as 2nd above, it is mandated that the concurrence of IT Department should be taken for schemes over Rs 10 lakhs. Some Departments/Organizations have been approaching the IT Department at an early conceptual stage with no specific proposal. Others have been seeking concurrence after most of the activities have already been implemented/tied up. Some other Departments/Organizations have been approaching the IT Department for procuring of hardware/software etc.

To streamline the concurrence of IT Department, it is clarified that the concurrence of IT Department shall be sought only on the following two stages:

- (i) The URS and the FRS should be approved by the IT Department in all cases
- (ii) The Implementation Plan should be approved by the IT Department

If these concurrences have been taken, no formal concurrence of IT Department is needed for procurement of hardware and software based on the aforesaid sanctions

#### Support from Kerala State IT Mission

Director, KSITM shall provide technical support to any Government Department/Organization for any purpose mentioned in these guidelines relating to an e-governance project

By order of the Governor.

DR AJAY KUMAR,  
Secretary to Government

To

The Director, Kerala State IT Mission (To upload the Government Order on the KSITM Website).

All Departments in the Secretariat.

Heads of All Department/PSUs/Co-operative Societies/Societies/Statutory Trusts.

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