

# What does the software requirement specification for local EGovernment of citizen database information system? An analysis using ISO/IEC/IEEE 29148 – 2011

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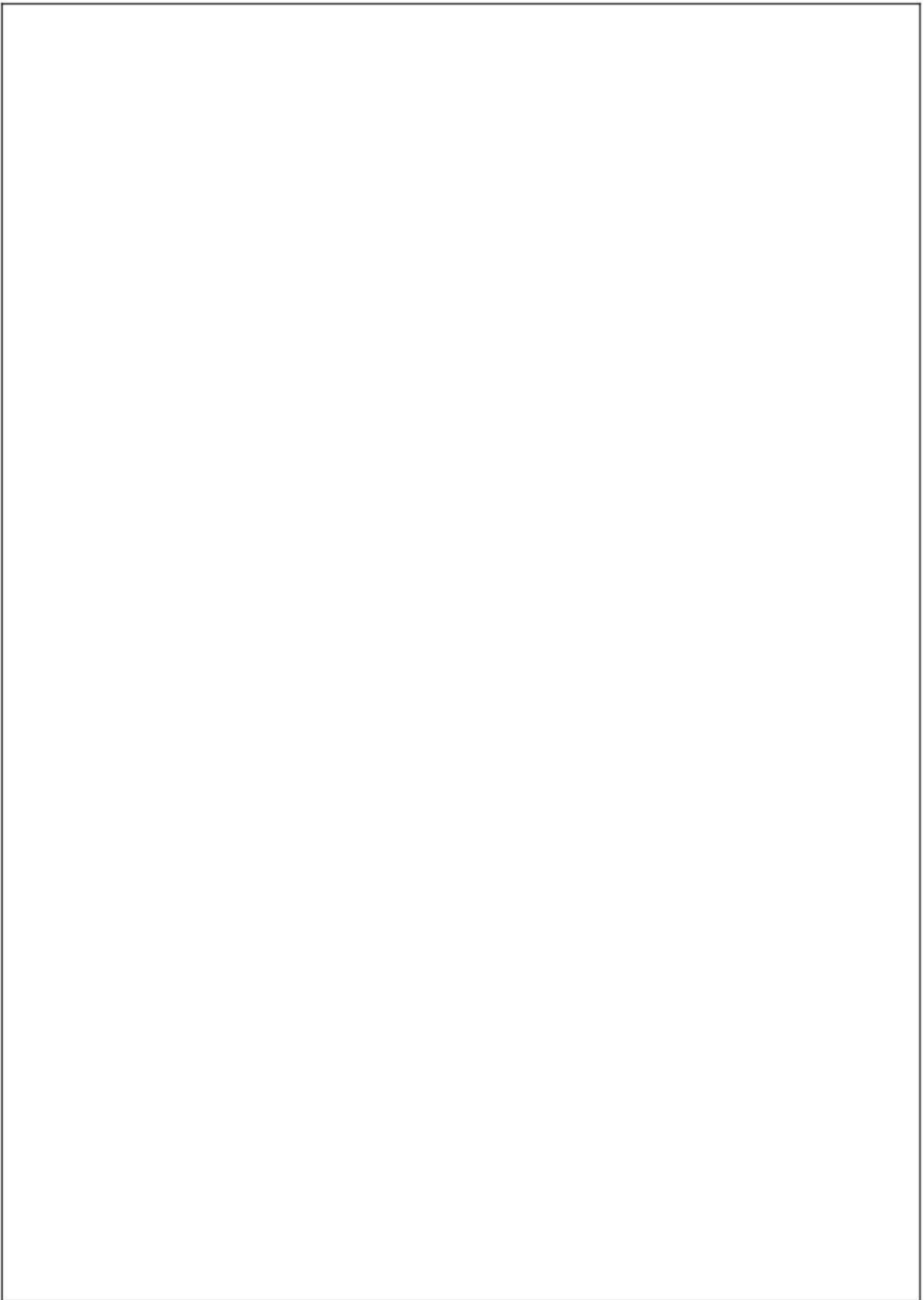
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## What does the software requirement specification for local E-Government of citizen database information system? An analysis using ISO/IEC/IEEE 29148 – 2011

**Abstract.** The management citizen database is Improper and not up-to-date will results decisions that are not strategic for the village development process. Inappropriate citizen data also results in long-term ineffective local government planning processes. Such as the problem of forecasting or predicting the level of growth of citizens as well as the need for development services which are part of the medium-term long-term plans of local governments. Therefore they need requires a citizen database information system. In connection with the needs of citizen database information systems, this study provides a solution of analysing documents, namely the requirement specification software for citizen database information systems using the ISO / IEC / IEEE 29148 edition of 2011. The study was conducted with case studies of 6781 management data of residents of the village of Sumberse<sup>11</sup>, Malang Regency, East Java. The method to execute the research consisted of data gathering stages, data flow and decision analysis, and the last is create software requirement specification. the specific requirements of the SRS documents ISO / IEC / IEEE 29148 2011 edition are external interfaces, functions, usability requirements, performance requirements, logical database requirements, design constraints, software system attributes, and supporting information.

### 1. Introduction

The e-government project failure sources are taxonomy tools and end user [1]. Even in other study finding that through the draft system according standards then the dimensions of reusability and dimensions would be better service and be able to provide better satisfaction to the users of the system [2]. Therefore developers must understand the needs of end users.

A study about citizen needs find leveling of needs priority. High priority that is ease of handling requirements, facilities and physical condition of office buildings, speed of service process, with the need of the service process as the item that holds the highest expectation. In middle priority, th citizen want the service officers as government officials to look clean and tidy. And the low priority is the availability of information on the type of service, hence the resources in this item can be moved to other items that need more resources to increase the performance. The last priority (possible overkill) are the cost that must be incurred. The public is not too concerned with the cost, and prefers good service, and is willing to pay for the service [3]. By looking at these findings we can conclude that citizens want the

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public administration services quickly. Therefore we need an application that is able to help citizen's services quickly. This application must be built according to proper business processes as well. So the authors see the problem of finding this Software Requirement Specifications (SRS) local e-government.

Make SRS became so important for the development of an e-Government service. If E-government be develop based on requirements and a prototype that complies with well-specified fit the criteria, it will minimizes the risk of building a system that is disliked by citizens or under-used by service providers [4]. This study linier with Kendall teory about Information system must be developing with analysis at first stages. At Information System Design and Analysis books, Kendall say about Three Major Phase to develop system are Analysis, Design and Implementation. So we know that analysis is very important to start the developing of information system [5].

At the analysis stages there are tree activity to result business proses analysis. Therefore The way out to meet business need paradigm and business proses paradigm of information system is making Software requirements specification (SRS) document. Because SRS establishes the basis for agreement between customers and contractors or suppliers (in market-driven projects, these roles may be played by the marketing and development divisions) on what the software product is to do as well as what it is not expected to do [6].

After SRS to be develop, so Organizations can make SRS as the basis for developing effective verification and validation plans. SRS also provides an informed basis for transferring a software product to new users or software platforms. And Finally, SRS can provide a basis for software enhancement.

In fact, much organization is not ware about developing stages of information system, no exception Sumbersekar Village. Sumbersekar Village is one of local government at Malang Regency, East Java that experiencing SRS problem because They don't have expert in information system. They don't know how to make SRS. They don't know how to analysis business process to be list of software requirement. They don't know the standard of SRS document too. They only know they need a citizen database information system of local E-government to manage 6781 citizen data in the day to day operation village office.

One example of public service is the Service of industrial business licenses. This application gives services which includes interactions and transactions that are expected to improve their services. This research can build the application that help the applicant can perform the licensing process with shorter time service without having to visit the office. The information of document status, validation, verification and report of the licensing process be got via SMS and e-mail can improve trust and efficiency if there are some requirements have not met the ideal requirements. Report functions can be increased supervision in the service of industrial business licenses. But the payment function cannot be implemented due to the need for database systems and cooperation with financial service providers [7].

This study can be adding our reference to finding SRS's local e-governmen [12]

So this research gives the solution with make a SRS document using ISO/IEC/IEEE 29148 2011 edition standard. The specific requirements of the SRS document using ISO/IEC/IEEE 29148 2011 edition standard are external interfaces, functions, usability requirements, performance requirements, logical database requirements, design constraints, software system attributes, supporting information and verification [8].

## 2. Method

The method to execute the research consisted of data gathering stages, data flow and decision analysis, and the last is create software requirement specification.

### 2.1. Data gathering

Data gathering stages is start of activity to execute in this research. Data gathering or can call with data collection is the process of gathering and measuring information on targeted variables in an established system which then enables one to answer relevant questions and evaluate outcomes [9].

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Data gathering is also a component of research in all fields of study including physical and social sciences, humanities and business [10].

In this stages, researcher search data about examples of citizen database, organization structure, and government role of operational village office. Data gathering stage are executed with interview, observation and literature study. The following is the result of the data gathering: Nomor Induk Kependudukan (NIK) is a Population identity number that is unique or distinctive, single and attached to someone who is registered as an Indonesian Population. NIK is valid for life and forever, given by the Government and issued by the Implementing Agency to each Population after the biodata is recorded. NIK was first introduced by the Directorate General of Population Administration when this Government Institution implemented a computerized national ID card system [11].

### 2.2. Data flow and decision analysis

This research makes Data Flow and Decision Analysis from Primer Data. That Primer Data from laws, regulations and role of local government or appeals. Data Kartu Keluarga (KK) and management or procedure business process are explained in Peraturan Presiden Republik Indonesia Nomor 96 Tahun 2018 tentang Persyaratan Dan tata cara Pendaftaran Penduduk dan Pencatatan Sipil [12]. The Village data and all about Local E-Government business process at explained in Pemerintah Indonesia. 2014. Undang-Undang No. 6 Pasal 1 Ayat 3 Tahun 2014 tentang Desa [13].

### 2.3. Create software requirement specification

The specific requirements of the SRS documents ISO / IEC / IEEE 29148 2011 edition are external interfaces, functions, usability requirements, performance requirements, logical database requirements, design constraints, software system attributes, supporting information and verification. The result of SRS can have explained at sub section 3.

## 3. Results

The following is a summary of SRS document as results of this research:

### 3.1. User characteristics of citizen database information system

Citizen Database Information System of Local E-Government need at least 3 user type, there are: Admin is user who can entry every data masters, transactions with CRUD (create, read, update, delete) management process. Only Admin get the delete access in this Information System. Staf Administrasi Desa is user who can entry every data masters, transactions with create, read, and update data. They can't get delete access to secure the business process. Kepala Desa is user who can read all report from database with many operation and management.

### 3.2. Functions requireme

Function Requirement is fundamental actions that have to take place in the software in accepting and processing the inputs and in processing and generating the output. Function requirement in citizen database information system can divided into 5 menus. Here is the explanation.

3.2.1. *Mastering menus.* This menu must divided into data master Propinsi, Kota, Desa, Dusun, RW, RT, kode pos to support data Tempat Lahir and Alamat at NIK and KK document. This menus also have data master Jenis Kelamin, Agama, Status Perkawinan, Pekerjaan, Kewarganegaraan, Golongan darah to support data at NIK and KK. Data Master Hubungan keluarga, Pendidikan.

3.2.2. *Transaction menus.* This menus must divided into submenu NIK, KK baru, KK lama. KK baru is submenu to make new KK that from old KK or parent KK. And the KK lama is submenu to edit old KK or parent KK with delete and move member who join on new document with submenu KK baru. So business process in this menus must be start to move data member in KK lama, and then make a KK baru with the member.

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3.2.3. *Report menus.* This menus must divided into Biodata Warga with filter NIK number or name, Kartu Keluarga with filter KK number or Head of Family Name, Rekapitulasi NIK with filter Pendidikan, Kewarganegaraan, Jenis Kelamin, Tanggal Lahir, Pekerjaan, Status Pemikahan, Golongan Darah, RT, RW, Dusun, Desa, Kota, Propinsi, Kode pos, Agama. In this submenus also we can add filter status like as aktif, non aktif (for die citizen), balita (before 5 years old), anak (before 12 years old), remaja (before 17 years old), pemuda (before 40 years old), senior (before 60 years old), lansia (after 60 years old). All report must ready on graphic performance too.

3.2.4. *Forecasting menus.* This menus for predict or forecasting citizen database with filter next years for range number 1 into 25 years. This menu are purpose for give citizen data to help government make a RPJM (Rencana Pembangunan Jangka Menengah) Desa. All report must ready on graphic performance too.

3.2.5. *Setting menus.* This menus are divided into submenu Setting User, Master Pegawai, Parameter Desa like as Name, Address, Many Contact Person, Map, Many Picture.

### 3.3. *Usability requirement*

Usability requirement is about nonfunctional requirements. And the nonfunctional requirement of citizen database information system are: System must can accessed on all online platform. System must perform in Bahasa. System must user friendly performance. System must access every time, 24 hours. System must every browser. System must access on desktop or mobile at Windows 7 minimal. System must print every report, graphic.

### 3.4. *Performance requirement*

Performance Requirement divided into Static Numerical Requirement and Dynamic Numerical Requirement. Static Numerical Requirement about the system are: system can apply minimal 5 computer. That 1 be a server and 4 be workstation. In this case to management 6781 data. System can result 4 grup information about data every citizen, every family, report on table and graphic.

### 3.5. *Logical database requirements*

The citizen database information system need 22 table that divided on 3 type as 15 table with master type, 2 table with transaction type and 5 table with report type. On Master type are 15 table. There are Propinsi, Kota, Desa, Dusun, RW, RT, kode pos, Jenis Kelamin, Agama, Status Perkawinan, Pekerjaan, Kewarganegaraan, Golongan darah, Hubungan keluarga, Pendidikan. On Transaction type are 2 table. There are NIK, KK. On Report type are 5 table. There are log, History NIK, History KK, Perpindahan KK, History Parameter Desa.

Dynamic Numerical Requirement are 95% process must be finish at one second.

## 4. **Conclusion**

The e-govern<sup>ment</sup> project failure sources are taxonomy tools and end user [1]. Even in other study finding that through the draft system according standards then the dimensions of reusability and dimensions would be better service and be able to provide better satisfaction to the users of the system [2]. Therefore developers must understand the needs of end users.

After analyzing and understanding the business process of local E-government of citizen database information system, we can get 4 conclusion. There are:

- The Software requirement spesification for local E-government of citizen database information system have 3 user type. There are admin, Staf Administrasi and Kepada Desa
- The Software requirement spesification for local E-government of citizen database information system have 5 menus. There are mastering menus to manage 15 master data, transaction menus to manage 2 trancastion, report menus to view many reports, forecasting menus and setting menus

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- The Software requirement specification for local E-government of citizen database information system need 22 table that divided on 3 type as 15 table with master type, 2 table with transaction type and 5 table with report type.
  - ISO/IEC/IEEE 29148 – 2011 can be implemented easily in the preparation Software requirement specification for local E-government of citizen database information system.

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