



# **AN APPROACH TO PAPERLESS DOCUMENTS**

## **Municipality of Varna**



A view of the City



The City Hall

# Municipality of Varna:

*Territory ~ 310 Km<sup>2</sup>*

*Population ~ 360 000*



Courtesy of CIA, the World Factbook



# Bulgarian legal basis for the development of a municipal information system in Varna, focused on paperless documentation:

- The Strategy for e-Government – December 28, 2002
- The Law on Electronic Governance– June 12, 2007, effective June 13, 2008
- Development Plan 2007-2013 of the Municipality of Varna – February 2007
- E-Government concept in Bulgaria for the 2010-2015 time frame



# Fundamental considerations in the process:

- Municipal scope of activity (civil registration; urban development; education; healthcare; services to the public; financial, social and cultural institutions/processes; local tax and fee; public procurement and logistics etc.)
- Specific requirements of the Law in multiple spheres/aspects of responsibility
- Availability, accessibility and security of information; data protection
- Interoperability requirements
- Reliability
- Price/performance factor

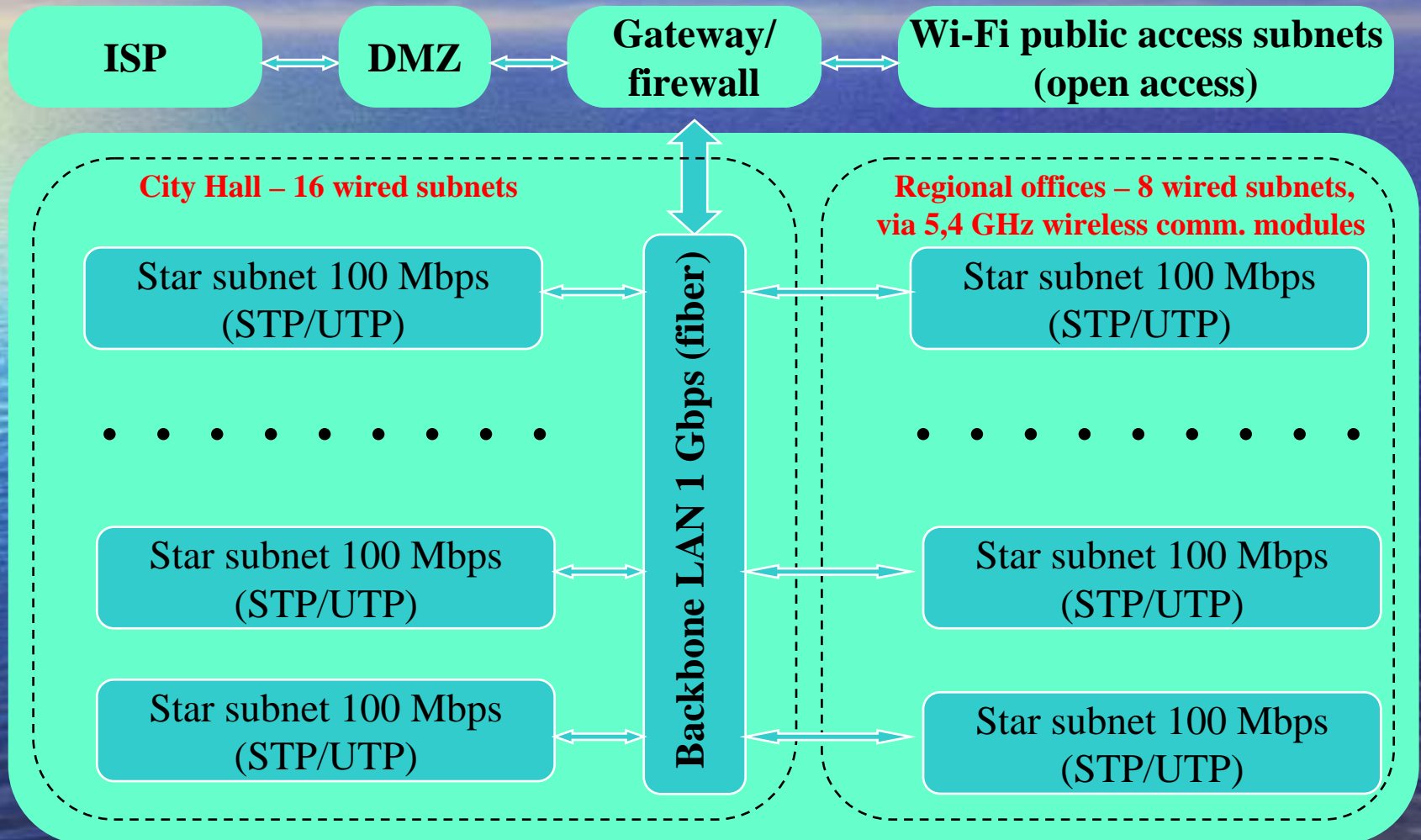


# Elements of the Municipal Information System (Intranet)

1. Municipal Metropolitan Area Network (MAN)
2. Server and storage facilities, workstations and peripherals
3. System platforms, communication and application software



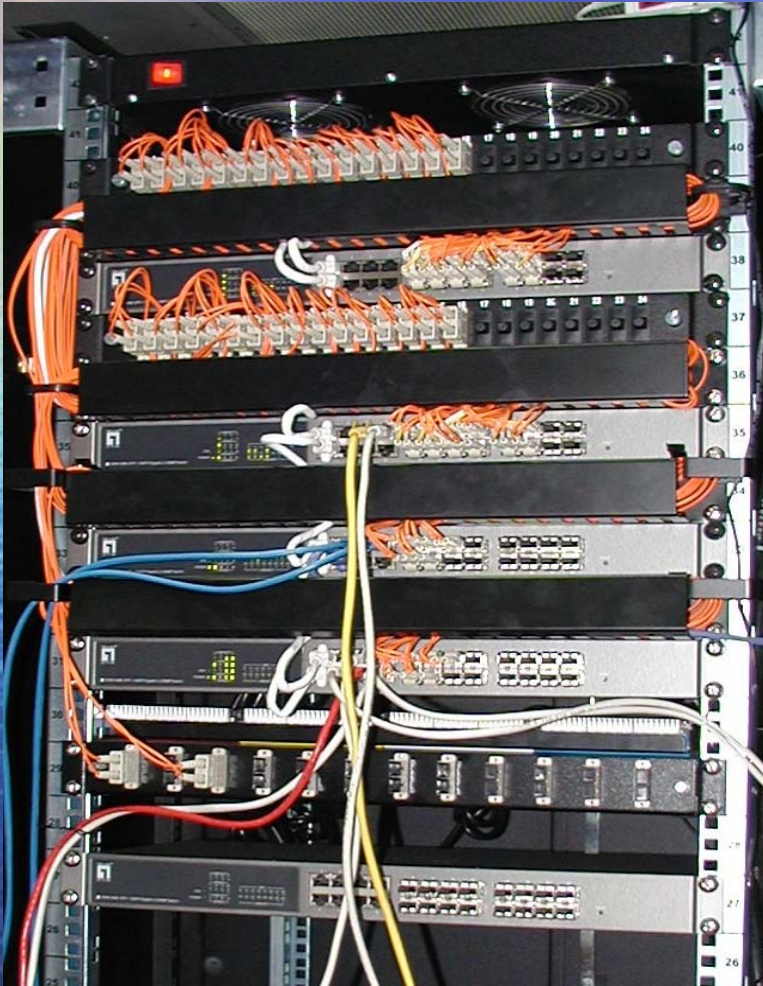
# 1. Municipal Metropolitan Area Network (MAN , simplified diagram) at present





# Municipal Metropolitan Area Network - 2

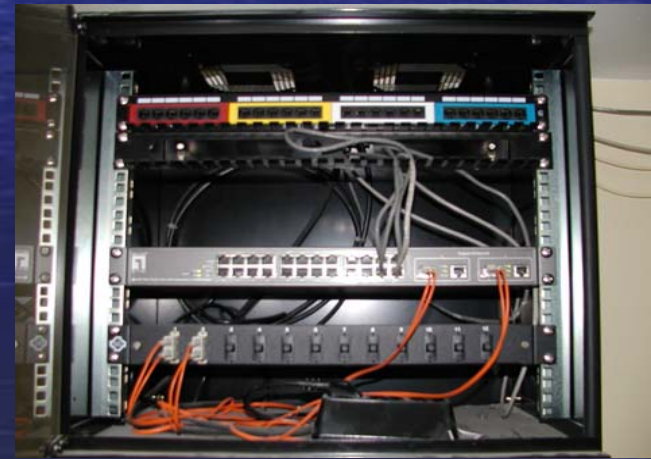
(hardware)



Backbone infrastructure, LevelOne switches



Star subnet infrastructure enclosures





# Municipal Metropolitan Area Network - 3

(City Hall building top)



Multiple array 5,4 GHz communication modules, connecting regional offices

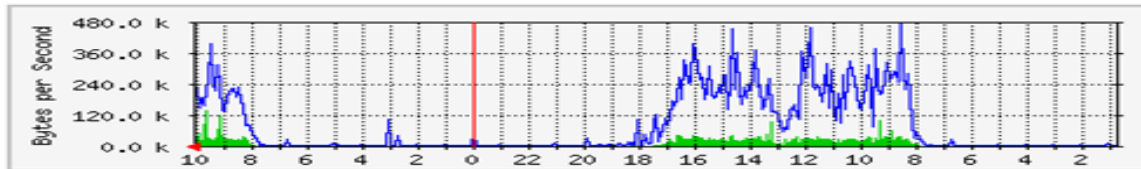


# Municipal Metropolitan Area Network - 4

## Stats for RadioLine

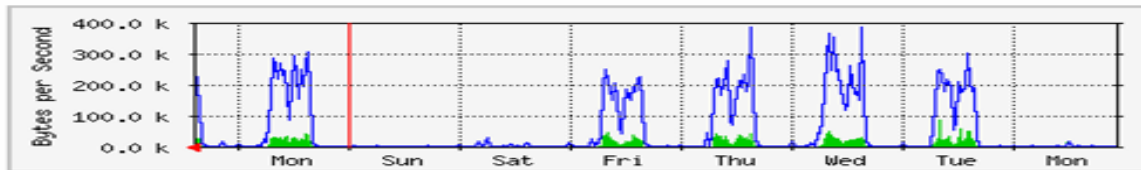
The statistics were last updated **Tuesday, 1 June 2010 at 10:05**,  
at which time 'rt2' had been up for **185 days, 16:03:38**.

### `Daily' Graph (5 Minute Average)



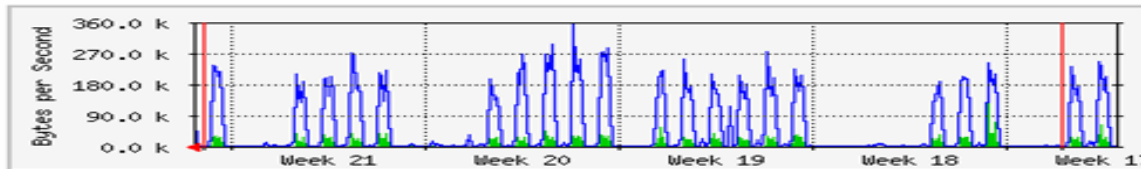
Max In:142.0 kB/s (11.4%) Average In:11.8 kB/s (0.9%) Current In:46.9 kB/s (3.7%)  
Max Out:476.3 kB/s (38.1%) Average Out:76.6 kB/s (6.1%) Current Out:171.6 kB/s (13.7%)

### `Weekly' Graph (30 Minute Average)



Max In:89.8 kB/s (7.2%) Average In:7769.0 B/s (0.6%) Current In:54.9 kB/s (4.4%)  
Max Out:387.5 kB/s (31.0%) Average Out:50.3 kB/s (4.0%) Current Out:257.6 kB/s (20.6%)

### `Monthly' Graph (2 Hour Average)



ISP - Internet traffic statistics at router



## **2. Server and storage facilities, workstations and peripherals at present**

- **Rack-mountable HP Quad core Intel Xeon 2666 MHz CPU-based system with 8 GB RAM and 2 x 146 GB hard drives – 10 units HP BL460cG1 installed, with HP EVA 4000 SAN and integrated dual power supply/dual communication control**
- **Rack-mountable HP Proliant DL380 G4 NAS server, expandable to 54 TB**
- **HP Proliant ML350 tower servers with Intel Xeon 3,2 GHz CPU as buffer and backup servers in the regional offices – 12 units**
- **Up to 1200 workstations in the main building and regional offices, basically Intel Pentium4 CPU - based PCs**
- **High speed network attached laser printers for general tasks, and local inkjets for specialized tasks**
- **Network attached high speed/high resolution scanners**
- **Uninterruptible power supply for the server/LAN infrastructure by backup Diesel generator and 8 KVA online UPS**



## Server and storage facilities - 2



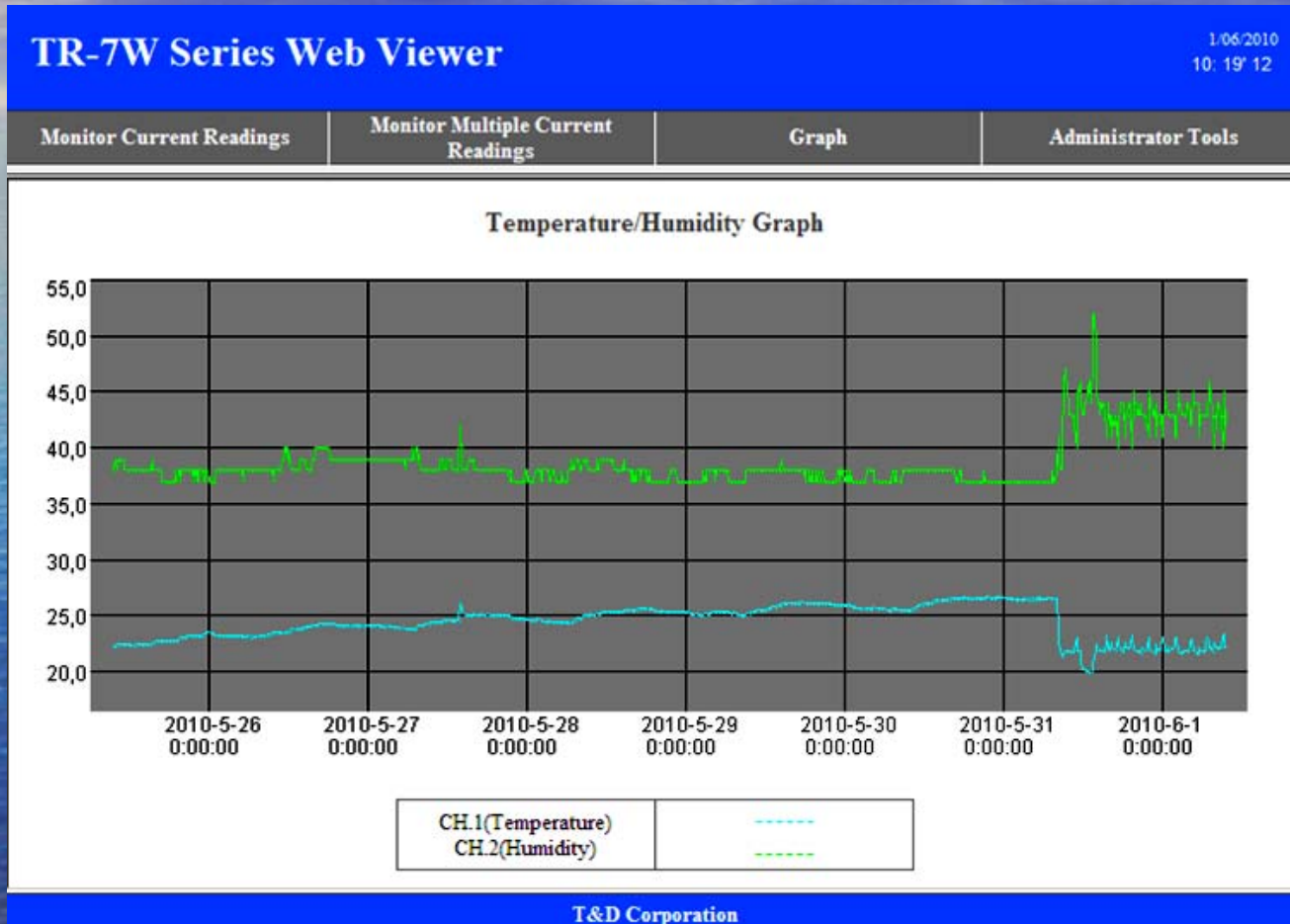
A view of the basic server/LAN infrastructure area



Xeon-based blade servers with SAN/NAS storage



# Server and storage facilities - 3



**Server/LAN area remote temperature/humidity monitoring**



# Server and storage facilities - 4



30 KVA monophase backup Diesel generator  
for the server/LAN infrastructure area power supply

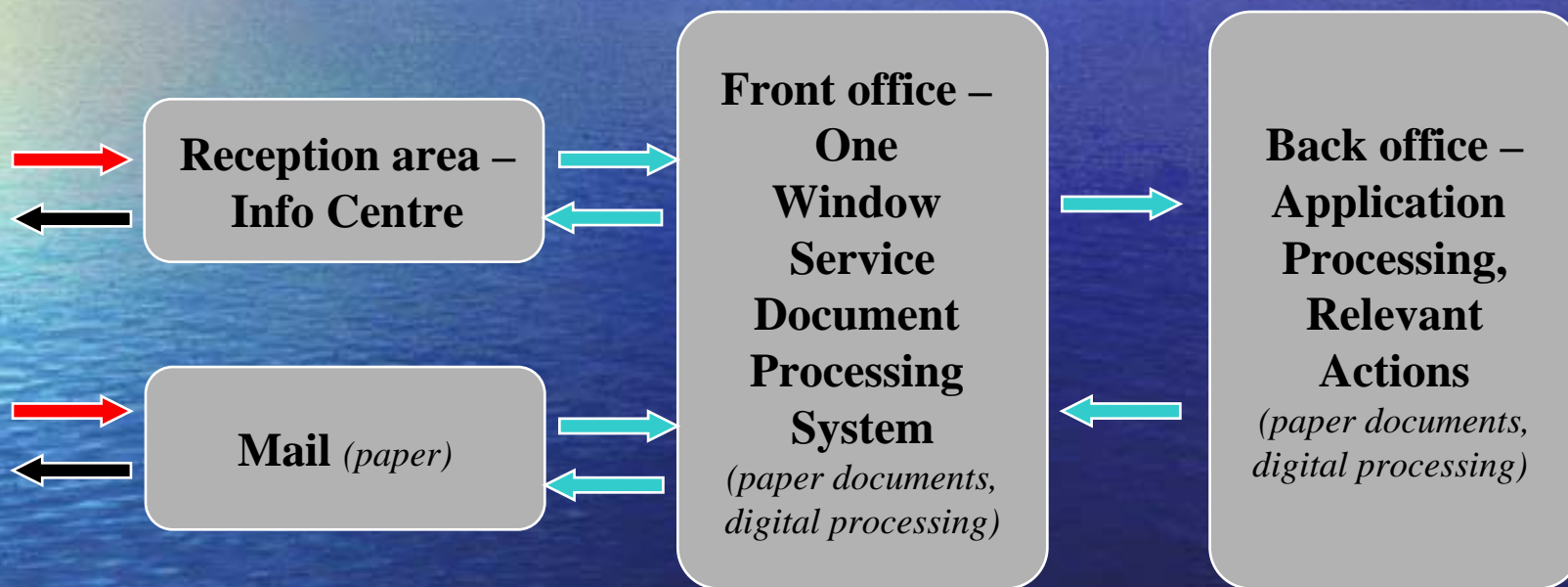


# 3. Basic system platforms, communication and application software licenses at present

- MS Windows 2000 server; MS Windows 2003 Server
- MS SQL 2000, Firebird (data bases )
- IBM Lotus Notes/Domino application bundle including:
  - Lotus Domino Enterprise Server
  - Lotus Notes client
  - Lotus Workflow
  - Lotus Quickr
  - Lotus Sametime Standard
  - Lotus Domino Document Manager
- Linux Red Hat Enterprise (web-based applications, nodes & firewall monitoring and control, etc)
- Uniform System for Exchange of Electronic Documents (USEED) (server/client exchange software, a national project under development)
- MS XP, Vista and MS Office (PC/Office software)
- Miscellaneous Web, CAD and graphic design software; Panda, NOD32, Casperski and misc. antivirus/ antispysware



# Document processing technology in Varna municipality, implemented 2004–2007 related to administrative services to the Public



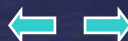
## Legend



Incoming document (application)



Outgoing document (service delivered)



Internal offline document circulation on paper



Internal offline document circulation on paper



# Front/back office general attributes, referring to document processing and services to the Public

Technology based on the concept “One Window Service” by the end of 2007

allowed the municipality of Varna to perform:

- Reception of applications in the reception area and/or by mail on paper, email in/out
- Registration, indexing, evaluation and routing of the applications to relevant/competent municipal entity/department on paper, and adequate repositories of the documents related on paper and digital media for further processing/archiving activities
- Delivery of the relevant documents to the recipient within specified time period (on paper)
- Control of document circulation, time elapsed, personnel authentication/authorization to perform actions and/or legitimacy of the application/actions performed, integrated PKI

The Law on Electronic Governance requires additional functionalities:

- Reception of digitally signed online and/or email applications
- Delivery of the service in the form it was required (paper and/or digital file)
- Electronic routing of applications and relevant documents from/to authorized personnel and/or another government authority when necessary
- Paper and electronic document repositories adequacy to the requirements for availability, security and accessibility of data on paper and digital media
- Interoperability of the technologies implemented, adequacy to standards and general requirements of the Uniform System for Exchange of Electronic Documents (USEED)
- Higher data security requirements



# **Actions performed to meet the additional requirements (2007 – 2009)**

- **Amelioration of overall productivity, passive and active components of some of the MAN star subnets with special emphasis on local tax and fee and financial control departments to meet the requirements of EN 50 173 standard**
- **Actions performed to obtain the necessary hardware and software platforms in order to achieve performance and functionalities specified by the Law on Electronic Governance**
- **Acquiring new licenses of software applications in the fields of civil registration, local tax and fee, document processing, communication/collaboration, and Intranet security**
- **Implementation of the new technologies – installation, customization, testing etc.**
- **Cooperation with the competent government authorities in the process of creation of the USEED and the elements of electronic services system (this project is not closed, and after the publication of “*E-Government concept in Bulgaria for the 2010-2015 time frame*” is continuing with a new scope and focus)**
- **Education and training of personnel involved**



# **Front and Back office specifics, based on Intranet scope and structure available at present**

- **All authorized personnel within the basic domains of municipal activity is computerized with access to common digital data bases and data processing utilities, allowing the performance of actions specified (including personnel of the 5 regional offices and 3 of the smaller settlements of the municipality) as well as post fact control through the specific log entries and security applications**
- **All authorized personnel have access to Intranet relevant resources and reference applications/databases as well as to the Internet**
- **The Intranet is adequately protected to meet the high security requirements of Bulgarian laws applicable**
- **The equipment installed is professional, with high reliability ratings**
- **Software platforms and applications are certified security tested products of world companies with impeccable quality reference**

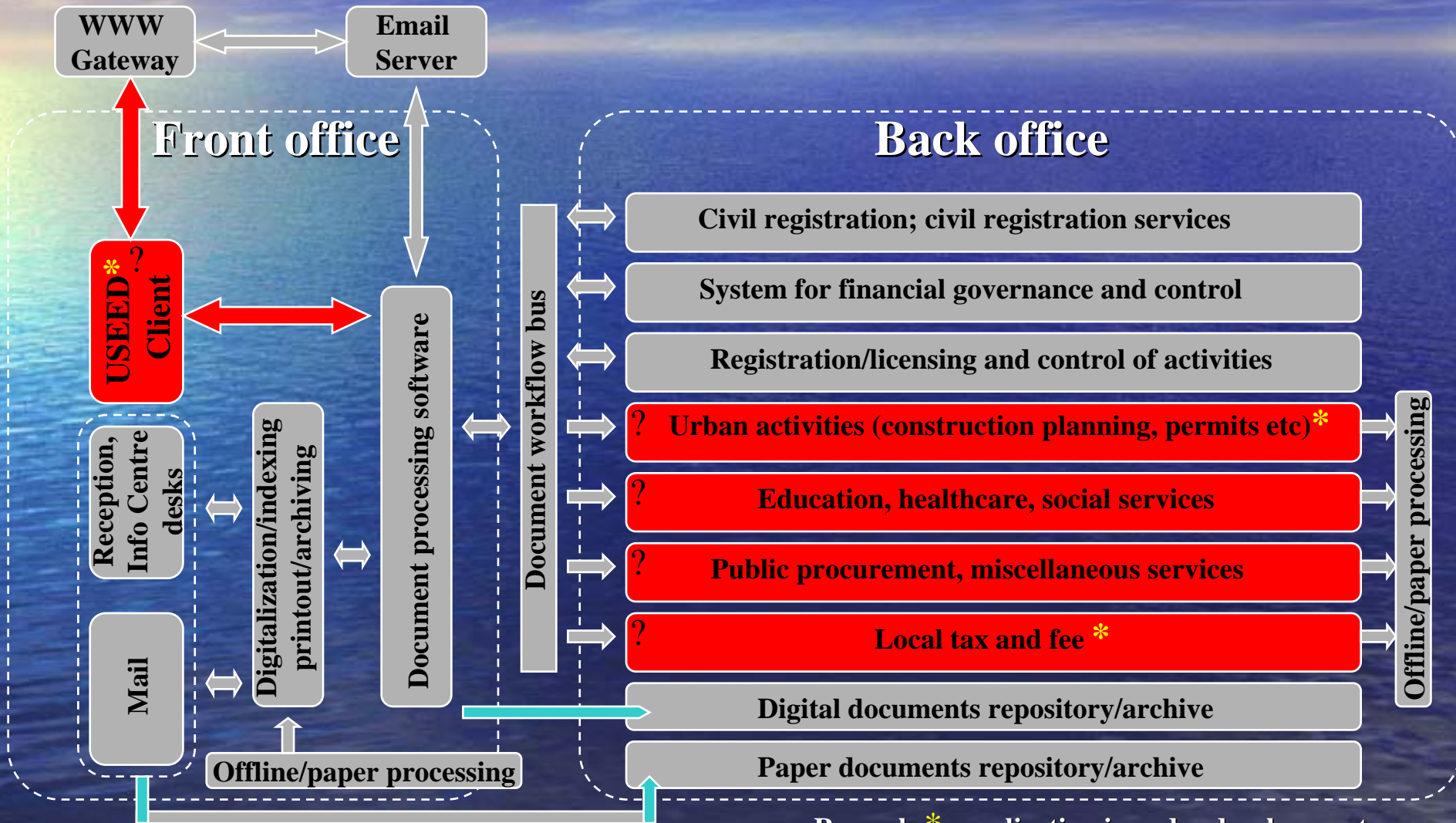


# Front and Back office specifics, based on Intranet scope and structure available - 2

- The basic acts of the administration are displayed and accessible on the municipal web site, and the activities of hardware, software and personnel are monitored by relevant Intranet utilities
- A set of technical improvements of reception areas have been made in order to facilitate public access/transparency/public control of services delivered
- The municipality of Varna is ISO 9001:2000 certified



# Intranet simplified structural/operational diagram of services to the Public at present





# A brief description of the diagram

- The modules “Digitalization/indexing, printout/archiving “, “Document processing software”, “Document workflow bus” are logic elements of a complete document processing system within the collaboration platform Lotus/Domino
- The module “System for financial governance and control” is a specially designed system for overall management of financial/contracting activities of the municipal administration within the said collaboration platform
- The module “Civil registration; civil registration services” is a complete civil/vital data registration system, functioning on local (Local Data Base “Population”) and on national (National Data Base “Population”) scales, capable to import/export and modify personal data by authorized personnel and to generate electronic documents within the scope of administrative services specified by the Law for Civil Registration. This module is a National standard, and is integrated in the Lotus/Domino platform.
- The module “Registration/licensing and control of activities” is a complete management system of all municipal regulatory, control and compulsory activities specified in acts relevant to municipal responsibilities (such as construction control, municipal property management and renting/leasing, traffic management, etc. – a set of 29 different procedures of municipal activities). The module has been designed by the municipality IT team, and is integrated in the Lotus/Domino platform.



# A brief description of the diagram - 2

- **The module** “USEED client” is developed by a competent government authority, and is expected to be functional by the end of 2010.
- **The module** “Urban activities (construction planning, permits etc)” is under development for one of the municipal regions with the kind cooperation and support of ESRI – Bulgaria
- **The module** “Local tax and fee“ is in the final stages of implementation, and is expected to be fully functional by the end of this year.
- **The modules** “Education, healthcare, social services” and “Public procurement, miscellaneous services” are subject to actual organizational and functional planning



# Municipality miscellaneous on-line services required by the Public on <http://www.varna.bg>

- Online hotel registers periodical endorsement – PKI enabled
- Kindergarten acceptance/approval system – PKI enabled/authenticated administration, open public access
- Municipal property register – PKI enabled/authenticated administration, open public access
- Municipal GIS map project (*courtesy of ESRI Bulgaria/ Bulplan Ltd*) – a GIS reference pilot project covering 2 of 5 municipal regions
- Web-based collections of official municipal documents (over 35 000 pages) – open access for preview/download
- City survey pan/tilt/zoom 270° web camera – open access
- WiFi Internet access – 6 subnets in the region of the City Hall, open access



## Some meditations on e-services

*A great part of the administrative services to the Public within the scope of e-services might be facilitated or redundant provided:*

- **The relevant databases of government authorities on a national and/or European scale are integrated**
- **Content, form and path of essential documents are standard international and/or European issues**



*Thank You*