THE IMPLEMENTATION OF THE PILOT PROJECT VERGILIUS FOR THE BLIND AND VISUALLY IMPAIRED AT THE NATIONAL AND UNIVERSITY LIBRARY IN ZAGREB

Dunja Marija Gabriel

✓IFLA LSN Section Standing Committee member

✓representative of Croatian Library Association,

✓Coordinator on implementation of pilot-project Vergilius in National and University Library in Zagreb

✓E-mail: dgabriel@nsk.hr

VerGilius

CONTENT OF PRESENTATION

- **INTRODUCTION**: social esclusion
- **WHAT IS VERGILIUS**?
- **GOAL (PURPOSE)** OF THE PILOT PROJECT
- **HISTORY AND DEVELOPMENT**
- **PARTNERS**

- **ARCHITECTURE OF SYSTEM**: how it works?
- **IMPLEMENTATION** IN THE NATIONAL AND UNIVERSITY LIBRARY IN ZAGREB
- **CONCLUSION**: legal frame, national strategy, accessibility

SOCIAL ESCLUSION

- European Disability Forum (EDF) organisation established in 1997. to gather European and national organisations of disabled persons and parents of disabled persons who are unable to represent themselves) – in 2007. signify the fact that „ one out of two disabled person has never participated in leisure, cultural or sport activities (has never had access to theatres, cinemas, concerts, to libraries...“

  (**EUROPEAN DISABILITY FORUM 1997-2007: TEN YEARS FIGHTING FOR DISABILITY RIGHTS,**
  http://www.1million4disability.eu/admin/wysiwyg/assets/pdf/declaration/EN.pdf)

- Accessibility to products, services, institutions and bodies of state administration and public institutions is prerequisite for **equal access and equal opportunities for people with disability**
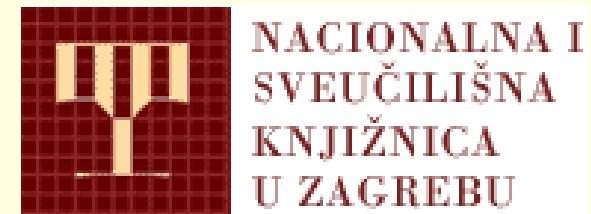
VERGILIUS – what's that?

- Vergilius - navigational information system as an aid in moving around the Library, orientation and navigation of the blind and visually impaired in indoor facilities
- Vergilius system implement the latest information and communication technologies
- enable **navigation** at the Library **where there is no GPS signal**
- enable the blind and visually impaired the use of various available library services and materials equal to the seeing users
- **The goal of the project**: to ensure **greater accessability of public services** to the persons with special needs by implementing Vergilius

VERGILIUS – HISTORY AND DEVELOPMENT

- 2007. started **development at the Faculty of Organization and Informatics** (FOI) in Varazdin as a **student project**
- FOI offered equipment and space for system development and testing of experimental – β version
- Company Siemens Croatia – borrowed PDA (personal digital assistant) mobile device used in development of system
- **authors of the project** Vergilius in August 2007. **founded in Zagreb firm Initium Futuri** and continue to develop the project
- at the beginning the project was based on **RFID** (radio-frequency identification) **technology** - use chip technology to broadcast information by radio frequency
- changes in technology required change in the project
- Vergilius was transfered from RFID technology to the **new technology of location by wireless network**
- result: pilot implementation of the system Vergilius become cheaper and more simple
- **in 2009.** Initium Futuri apply for **financial support** to the company Zagreb holding and obtain some amount of money **for the first step of pilot implementation of Vergilius in the National and University in Zagreb**

PARTNERS ON THE PROJECT VERGILIUS

- **INITUM FUTURI Company** – founded in 2007. by former students of the Faculty of Organization and Informatics (FOI) in Varazdin and company Rudjer inovations by investment of World Bank

- basic activity is development of high information and communication technologies and software development

- **ZaMirNET Association** – founded in 1992. as a part of ZaMir Transnational Network (ZTN) and participant on the international project Communications Aid

- use information and communication technologies to build civil society and accomplish social justice in inovative and effective way in Croatia and region

- **NATIONAL AND UNIVERSITY LIBRARY IN ZAGREB**

www.zamir.net
ZaMirNET

NACIONALNA I
SVEUČILIŠNA
KNJIŽNICA
U ZAGREBU

initium futuri
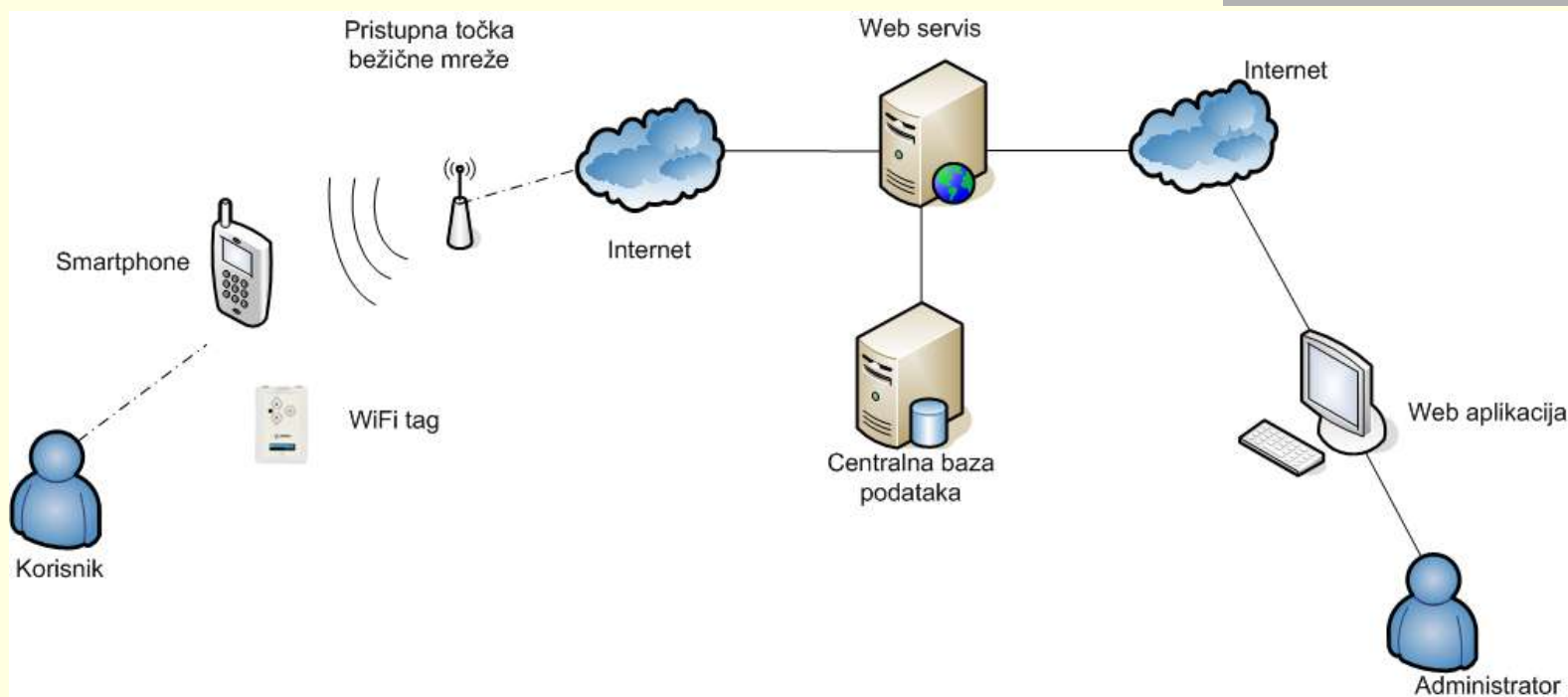"Where the future starts"

ARCHITECTURE OF SYSTEM: How it works? **Components!**

a) **WiFi tags (chips)** – type of wireless network, belong to the most widespread class of wireless local area network (WLAN) devices based on IEEE 802.11 standards (hang up over the neck of user)

b) **access points** of wireless network (WLAN)

c) mobile **Smartphone** devices

- receive information about user location by means of wireless

- has text to speech softver which translate informations and gives user information he need

- library user has mobile Smartphone with Vergilius application (can get it at the main entrance)

d) **Web service** – find out in data-base information about user location

e) administrative **Web application**

COMPONENTS OF SYSTEM

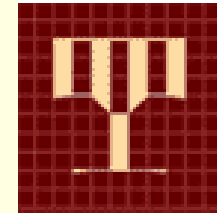# ARCHITECTURE OF VERGILIUS – graphic presentation

- Smartphone device thanks to wireless accessible in Library, receive information about user zone
- Vergilius softver on Smartphone device receive data and use Wi-Fi network and Web servis to find in data-base information of user location
- Smartphone device translate information to user with text-to-speach softver

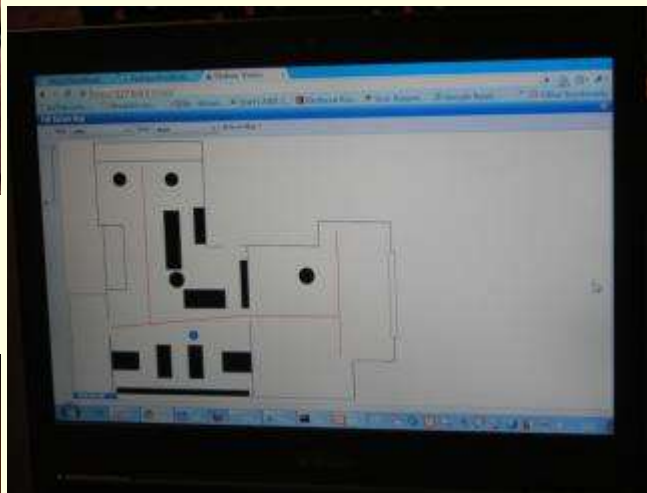# IMPLEMENTATION OF VERGILIUS IN NUL

- during the 2009./2010. the National and University Library (NUL) in Zagreb has launched the implementation of the pilot-project Vergilius

- it represents a new programme of library services

- an important link in creating postulates for a dispersion of library services to the blind and visually impaired within the facilities of the Library

- **1. stage of implementation: user enter into one of the rooms covered by wireless**

- Vergilius application can "identify" zone where the person stand and give audio information to user about that interest point (zone)

- **2. stage of implementation: navigation of user to other interest points (zones)**
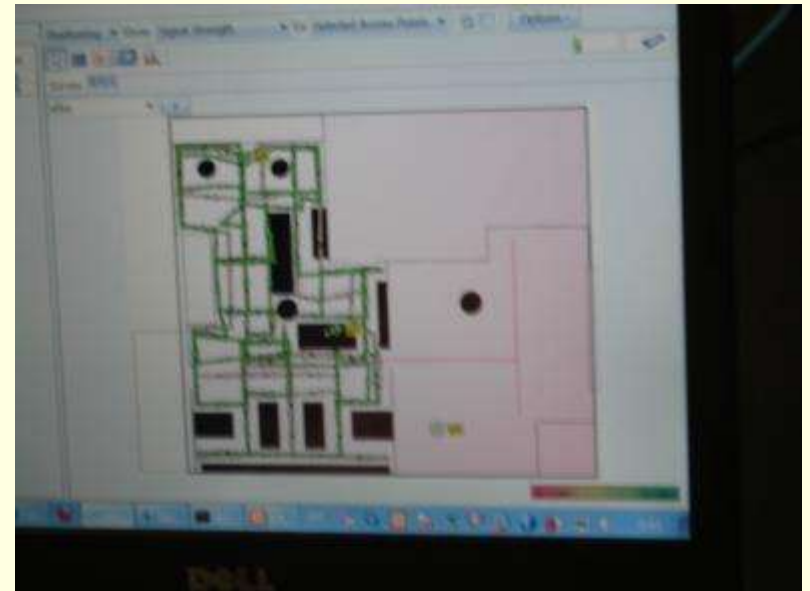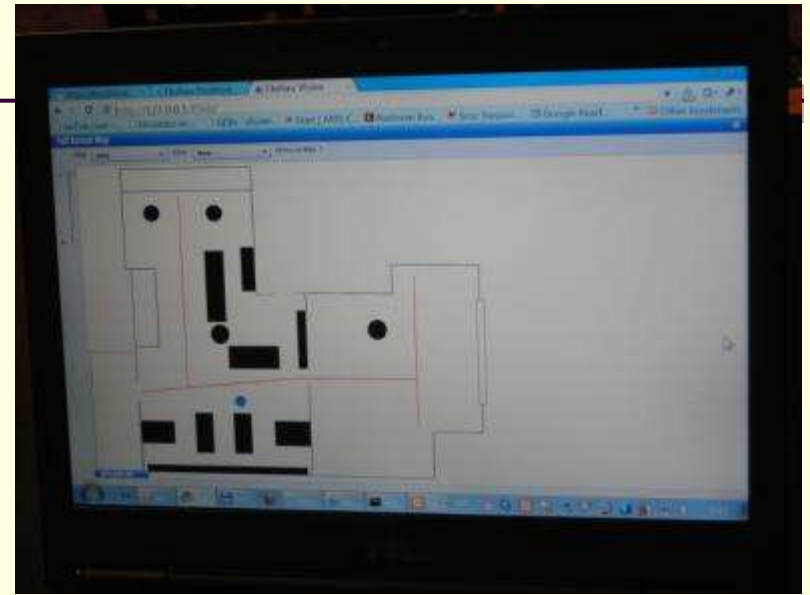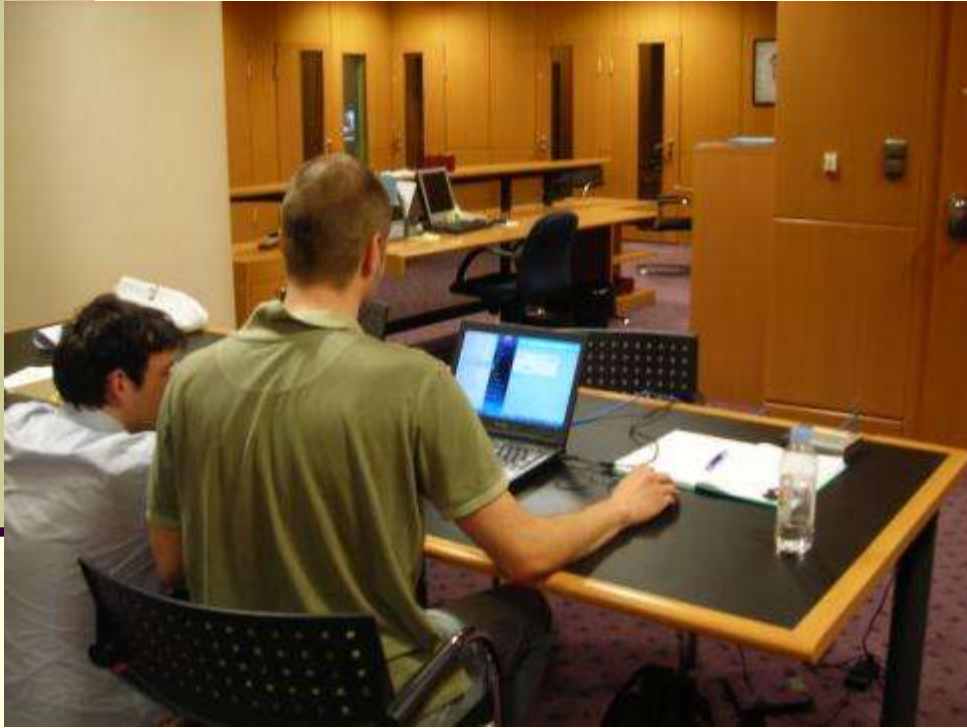
IMPLEMENTATION OF VERGILIUS IN NUL

- **technical application of the 1. stage** of implementation of Vergilius in NUL **include:**
- preparation of **detailed inner plan of the building** with precisely dimension of important library rooms, list of furniture (scheme of shelves, computers) and their distance between doors, walls, elevators, stairs etc.
- **coworkers from NUL** were choosen (librarian as a coordinator, architect, person from ICT Department, electrician)
- **cooperation with 2 authors of the project** from company Initium Futuri (Marko Velic, Hrvoje Pedljo)
- **testing of Vergilius in the Collection of music and audio material** on the 2. floor of Library:
- **provide special space** for testing without disturbing daily work in collection and other users within the facilities of the Library
- **provide separate cabins** for listening music and audiometarial to the blind and visually impaired within the Library

IMPLEMENTATION OF VERGILIUS IN NUL

IMPLEMENTATION OF VERGILIUS IN NUL

IMPLEMENTATION OF VERGILIUS IN NUL

- **results of the 1. stage of implementation** (November 2009. - April 2010.):

- develpment of functional prototype (model) that work in informational mode (give user information where he moves and in which room/zone (of collection or department in the Library) is he at that moment

- according to the latest testing in the Library the system precisely determine the room/zone where is user, but still has error in location from 2 up to 6 meters

- accomplished results point out importance of **further development of Vergilius**, need to apply for financial support and **look for new partners in Europa who can helf to develop and finish the whole large project**

- **some of suggested gudelines for further development of Vergilius** for more reliable navigation of the user:

- to produce version of system that can combine Wi-Fi tag and Smartphone device (to get quicker information from the system about location of user)

- testing of the system through much more access points of wireless network (can enlarge exactness of location of user)

- integration with digital compass on mobile device (to get precisely information in what direction user stand)

LEGAL FRAME AND NATIONAL STRATEGY

- **2006.** General Assembly of United Nations adopt the UN **Convention on the rights of persons with disabilities**
- some of important obligations of countries that signed Convention are: practical application of fundamental <u>human rights like dignity in political and public life, equal recognition before the law, non-discrimination in the civil society, freedom of thought and speech, access to informations, right for education, work and employment,</u> right to take part in political, public and cultural life of community
- **Republic of Croatia ratify Convention**
- **2007.** Croatian Government adopted new strategy for improvement the rights and status of persons with disabilities as **"National strategy of equalization of opportunities for persons with disabilities 2007.-2015."**
- point out some important spheres for integration people with disabilities in social community: <u>mobility and accessibility, modern technology and universal design for life and dwelling</u>
- to **enable independent life** is crucial to **secure dignity** of people with special needs and disabilities

CONCLUSION

- word **ACCESSIBILITY** is often use to protect and defend the human rights of people with disabilities and thier access to variety of public services and products

- **more than 50 million EU citizens are disabled people** (represent more than 10% of the EU population)

- **1 family in 4 has a member with a disability**

- disabled people are **more than twice as unlikely to reach third level of education** as non disabled persons

- implementation of pilot-project Vergilius can be usefull in **the National and University Library in Zagreb as one of the most important academic institutions in Croatia**

- **system Vergilius** can considerably **facilitate orientation and access to library services and knowledge to blind and visually impaired in academic community**

- project Vergilius **promote appliance of new technologies for inclusion of people with disabilities**

- project Vergilius represent significant step towards implementation of innovative technical solutions for **inclusion of special sensitive social groups in civil society based upon knowledge**