

# INFO@HAND: Mobile Application for Conference Series

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**Abstract.** The paper presents an offline mobile application (INFO@HAND) providing information about the DIPP conference series for conference participants and scientists interested in the conference scope and topics. In order to support the participants of the international conference, the application contains an event calendar, provides information about the presentations (including the abstracts as well), the presenters, locations and the organiser(s), presents the call for papers and the important deadlines, a map with the conference locations, etc. The offline application is more than a conference guide because it can also present conference materials (presenters and papers) of the preceding years, thereby representing a scientific knowledge base.

**Keywords:** Mobile Applications, Conference Guide, Conference Archive, Event Calendar

## 1 Introduction

The number of mobile devices including smart phones and tablets increases quickly these days. It is also important to note that they are always at the hand of the users. They are useful tools for providing information on a large variety of subjects, and conferences are no exception. This motivated the Institute for Computer Science and Control, Hungarian Academy of Sciences (MTA SZTAKI) and the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences (IMI BAS) to create the INFO@HAND DIPP mobile application [1]. The application provides information for the participants of the conference and presents the conference materials (papers and information on presenters) of the preceding years. The application was created within the framework of a joint IMI-BAS – MTA SZTAKI bilateral academic cooperation project entitled “Development of Software Systems for Multimedia and Language Technologies” [3].

INFO@HAND DIPP belongs to the GUIDE@HAND application family developed by eLearning Department of MTA SZTAKI. GUIDE@HAND was originally created as an audio tourist guide application for smart phone users [4]. The application is currently available on iOS (iPhone, iPad) and Android platforms [2]. The guide provides various tools and interactive services for mobile exploration of cultural places and objects in several languages. It provides functions as follows:

- Guided walks with various durations. The application helps tourists to discover a city or region with turn-by-turn navigation, guiding them from one interesting sight to the next. The tourists will be offered the relevant information (detailed description, pictures and audio records, etc.) at the right place.
- Offline or online map with the current position of the visitor.
- Explore function for exploring the sights alone: whenever the tourists approach a point of interest their device will automatically provide them with basic relevant information.
- Showing useful places located in the neighbourhood on the map.
- WEB 2.0 services: sharing user experiences and ratings on Facebook, Twitter, etc.
- Recording user experiences. While using the map, the program will automatically track the user's route. At any point, the visitors can grab and store an experience by taking a picture, recording a voice memo or taking a note of something which catches their eyes.

The GUIDE@HAND family covers many destinations in Hungary and abroad. In addition to its primary objective as an audio tourist guide, the GUIDE@HAND application has also been adapted to the needs of several other application domains.

Web-based and offline applications are available for content developers to prepare and edit content. Furthermore, the content can be synchronised with existing data bases of web portals in order to provide the same content both on the Web and in the mobile application. This helps keeping the content up-to-date in the application and reduces the time needed for content editing.

The two academic institutions IMI BAS and MTA SZTAKI have had an intensive co-operation for many years which includes mobile application development as well. As a result of the cooperation, several applications were created within the GUIDE@HAND family. They include the conference guides GUIDE@HAND DIPP 2013 and 2014 and the tourist guide GUIDE@HAND Veliko Tarnovo. The tourist guide contains a demo guided tour in Arbanasi. The Bulgarian Iconographical Digital Library (BIDL) was integrated with the GUIDE@HAND mobile application. The integration makes it possible to mark digital iconographical collections with QR codes and explore them on mobile devices through the GUIDE@HAND tourist guide. INFO@HAND represents the most recent result in this ongoing cooperation.

The next section of this paper discusses our event guides serving as a take-off for further applications. Then INFO@HAND applications are introduced where a conference guide is extended with information and materials of previous conferences. Section 4 gives a brief overview on the DIPP conferences serving as occasions for which our mobile application was adapted. Then we present the functionality of the mobile application. The last section summarises the conclusions of our development.

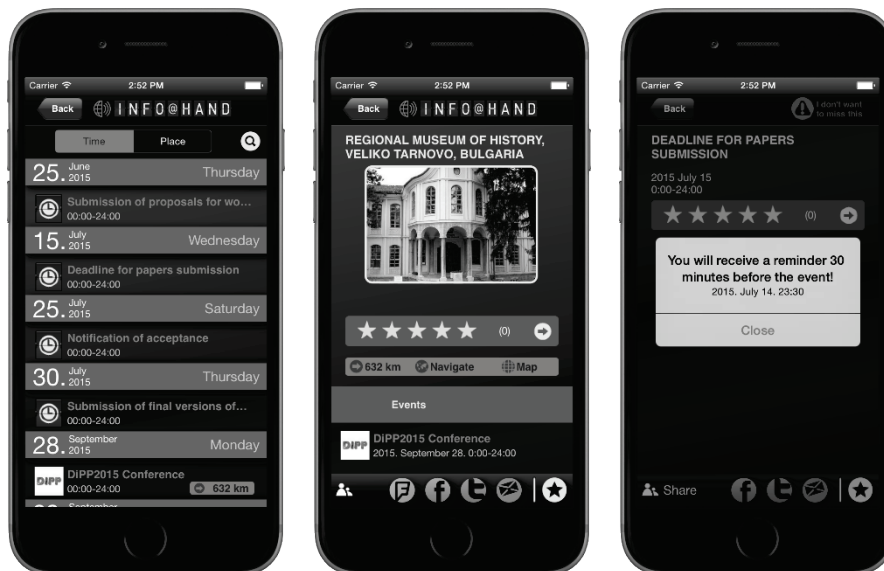
## 2 **EVENT@HAND – an interactive leaflet on smartphones and tablets**

We recognised that many GUIDE@HAND users need information not only on sights and useful places but on related events as well. For this reason, we added to the application the event recommendation function, which can inform the tourist about the events that are located close to them in both space and time. This led to the standalone EVENT@HAND applications created for a specific event. It can be used on smart phones or tablets on the site of the event without Internet connection. EVENT@HAND integrates all elements of a printed leaflet and extends it with functions available on mobile devices:

- event calendar;
- information and map on the event locations;
- introduction of exhibitors and sponsors;
- position information created by using GPS in the open air and with QR codes inside buildings, based on indoor and outdoor maps prepared in advance;
- support for registration;
- support for checking in participants;
- satisfaction survey;
- multilingual extension of existing webpages, ideal for foreign visitors and local guests as well;
- no need to build a new database, the existing content can be integrated for the mobile presentation;
- well-proven existing framework that can be customised to reflect user requirements;
- optional service packages to cover both simple and complex events;
- off-line package to be downloaded in advance (at home, at the hotel, etc.) to iOS and Android platforms;
- several successful reference applications.

The application can be used to introduce conferences, professional events, sport events, festivals, series of programmes and single events. It can present the events in a list sorted by distance and time (see Fig.1). It is possible to set requests for notifications before particular events and set up the users' own programme. It provides a detailed description of each event (with the name and CV of presenters, photos, any other desired information in video, audio, text, etc. form). Information on useful services can be found about the venue and its vicinity. Sponsors are introduced with contact name, address, short and/or extended content, etc. Further functions can be also integrated such as registration to the event, ticket information, etc.

EVENT@HAND has already proven to be a useful information source for visitors on many occasions in the area of science, sport and culture: Long Night of Museums, Long Night of Science, Hungarian Science Festival, International Book Festival Budapest, Vodafone May Day, World Championships in Fencing, International Gospel Festival, etc.



**Fig. 1.** Screenshots related to events: calendar with events, the location of an event, setting the notification request.

### 3 Applications for Conference Series: INFO@HAND

The event recommender application can be adapted to conferences as well and can be used as a conference guide providing information on the programme, the talks, the speakers and the location of the conference. The application was used at several international scientific conferences:

- International Conference on Digital Presentation and Preservation of Cultural and Scientific Heritage—DiPP, 2011—, Veliko Tarnovo, Bulgaria
- IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2013, Budapest, Hungary
- International Conference on Computer Science and Information Technologies (CSIT) 2013, Yerevan, Armenia
- International Seminar on Eternal Mementos of Transience—Preserving Heritage Values in Historical Cemeteries 2014, Cluj-Napoca, Romania
- IEEE International Conference on Cognitive Infocommunications (CogInfoCom) 2014, Vietri sul Mare, Italy

The eLearning department of MTA SZTAKI accomplished further development of the application according to the special needs of conference organisers. We cooperated with the general chair of CogInfoCom (Péter Baranyi, MTA SZTAKI) in order to create new functionalities of the application and provide general information on a whole conference series. This approach resulted in the implementation of

INFO@HAND applications, which can be used for a conference series covering many years instead of developing a separate app for each conference.

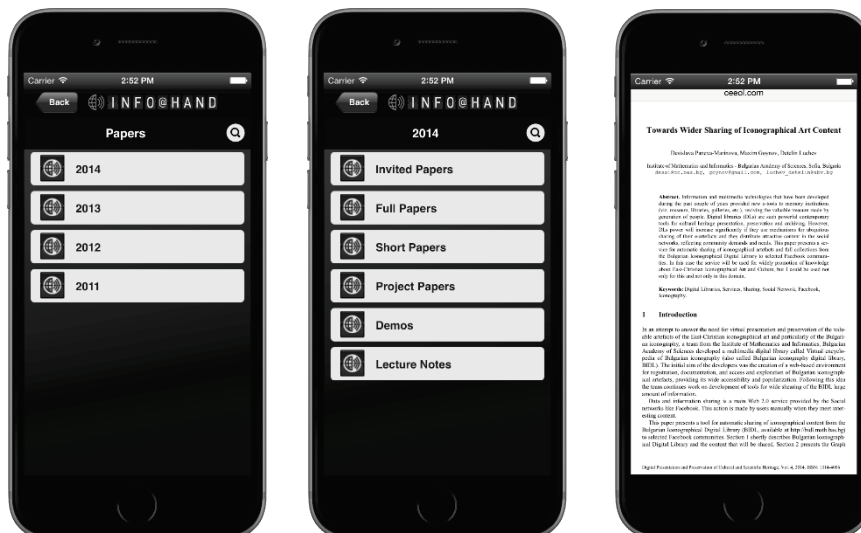
The INFO@HAND offline mobile applications primarily target conference participants and scientists interested in the scope and topics of conference series. The application offers a variety of services to smart mobile device owners on iOS and Android platforms. The main features of the application include:

- supporting the event recommendation service of the current conference by presenting the events,
- providing a list, abstracts and information about the presentations (lectures, posters, workshop lectures, etc.), presenters, locations and the organiser(s),
- publishing information about sponsors and exhibitors,
- adding the call for papers and the important deadlines to the application,
- describing locations and supporting to find them by using an interactive offline map.

The offline application is more than a conference guide because it can also present the conference materials (papers and information on presenters) of the preceding years, constituting a scientific knowledge base. It contains the abstracts and links to the final versions of the papers for online access (see Fig. 2).

The users can get the list of speakers as well. After selecting a speaker, the user can get detailed information including the name, picture, affiliation, job title, biography and contact information of the speaker. The pictures are very useful for associating the provided information and the people the user personally meets during the conference.

Some of our conference guides were adapted to INFO@HAND applications this year. The application is available for the following conference series: CogInfoCom, CSIT and DIPP.



**Fig. 2.** Screenshots related to accessing papers of preceding conferences: the list of years when the conference was organised, the presentation types in a specific year, the full paper.

#### **4 International Conference on Digital Presentation and Preservation of Cultural and Scientific Heritage—DiPP**

The International Conference on Digital Presentation and Preservation of Cultural and Scientific Heritage—DiPP aims at presenting innovative results, research projects and applications in the field of digitisation, documentation, archiving, representation and preservation of global and national tangible and intangible cultural and scientific heritage. The main focus is to provide open access to digitised cultural heritage and to set up sustainable policies for the continuous digital preservation and conservation. The priority area is the digital presentation and preservation of cultural and historical objects under conditions of risk, including those from the Veliko Tarnovo region. The forum demonstrates innovative technologies and prototypes, including digital repositories, digital archives, virtual museums and digital libraries, which result from established practices and achievements in the field. Representatives of public and specialised libraries, museums, galleries, archives, centres, both national and foreign research institutions and universities are invited to participate and exchange experiences, ideas, knowledge and best practices of the field.

General areas of interests include (but are not limited to) the following topics:

- Digital libraries, e-archives, repositories, virtual museums, e-exhibitions and encyclopaedias of cultural heritage.
- Virtual reconstructions and interactive multimedia solutions for museums, theatres, concert halls, exhibitions, etc..
- Restoration and preservation of tangible and intangible cultural heritage.
- Acceleration and facilitation of the sharing and exchange of research data.
- Issues of the protection of intellectual property: determination, accreditation and management of rights to digital content.
- Documentation, visualisation and interaction in museums and archives.
- e-Infrastructures and open access to digitised cultural and scientific heritage.
- Aggregators for transfer of digitised wealth within the European and global digital environment;
- Semantic processing of cultural heritage knowledge. Techniques for extracting digital data and knowledge.
- Use, efficiency and design of interfaces for applications in cultural heritage. Multilingualism.
- Interactive systems in cultural and creative industries. Social games. Digital storytelling in cultural heritage.
- Educational applications of digital libraries with cultural and scientific content.
- Digitalisation of cultural heritage and economics of cultural tourism.

The Workshop on Open Access to Scientific Publications and Data, which is held within the conference, focuses on the following activities: Open Access indicators;

disseminate partners' best practices; discuss research problems in the field; discuss the possibilities of establishing a network of open-access repositories; contribute to the problems of the harmonization of national legislation and practices; and discuss the possibilities of developing training courses for creators and managers of scientific digital repositories to ensure interoperability.

## 5 The Application: INFO@HAND DIPP

MTA SZTAKI has been developing the mobile conference guides for the DiPP conferences since 2013. MTA SZTAKI and IMI BAS decided to apply INFO@HAND to the DiPP conference series as well (see Fig. 3). The whole content of the preceding conferences has been added grouped by years. Now, you can find all papers and information on the presenters starting from the first conference in 2011. The full papers can be downloaded to the mobile device from the Central and Eastern European Online Library (CEEOL) [5]. INFO@HAND contains the following basic components:

- The *Organizers* function provides information on the conference organisers. It includes the description of organising institutions, sponsors, committees, etc.
- The *Presenters* function provides information on presenters of the latest and the preceding *DiPP* conference(s).
- The *Program* function offers an overview of the important dates, events and schedule of the latest conference.
- The *Map* function helps in exploring the conference venue by using an interactive map.
- The *DiPP* function presents general information on the conferences.
- The *Papers* function provides information on papers delivered at the *DiPP* conferences. It presents the abstracts of the papers and links to the final versions for online access.
- The *Places* function presents places relevant to the latest conference.
- The *More* function contains some general setting options of the application (e.g. language, selecting online or offline map, update, etc.).



Fig. 3. Screenshots from INFO@HAND DIPP.

## 6 Conclusions

The development presented applies mobile devices for providing information on conference series. The great advantage of mobile applications is that they can provide information about a conference on the site. People can get the information about the conference and the contents of the presentations through their own devices (smartphones or tablets) at any time and any place. The application may spread the scientific content of the conference to further people who could not visit the conference. Our experiences gained in mobile application development could be successfully exploited in other conferences as well. Therefore we are looking for further co-operation.

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