

Preface

Future Internet presents a more ubiquitous and mobile Internet. Mobility support is increasing the applicability of Future Internet to new areas, where mobile platforms such as smart phones and tablets are enabling a tremendous range of applications based on ubiquitous location, context awareness, social networking, and interaction with the environment.

The potential of the Future Internet is not limited to smart phones. The Internet of Things (IoT) is another emerging area of the Future Internet, which is offering a higher integration of the cybernetic and physical world. The main goals from the IoT are to collect data from the real-world entities and events. Many entities may move around in a real world environment, thus making the IoT devices attached to them mobile. Handling such mobility and the associated system dynamics is thus a key requirement for IoT solutions and hence adequate support it needs to be provided.

This Special Issue presents the last advances in the Internet of Things area in order to solve some of the challenges for provisioning a proper Internet integration of the Internet of Things through IPv6 technology, offers the proper protocols and mechanisms such as push notifications and Mobile IPv6 to support a scalable, mobile and energy-aware Internet of Things, and finally how to exploit the data from the Internet of Things.

Regarding, energy this is presented a relevant work about how the Internet of Things and continuous monitoring will allow to reduce the energy consumption, and how the integration of the appliances in Internet will made them much intelligence, making them interoperable with mobile platforms and social networks. All this intelligence is a consequence of the power of the data, but even when the Internet of Things is providing the mechanisms to carry out the proper monitoring and connectivity, this data requires to be processed, for that reason how to convert all this flows of RAW data from the Internet of Things and Web of Things are topics also addressed in this Special Issue. Finally, examples of the potential of the Internet of Things, mobile services and mobile platforms are presented in a solution for mobile Health.

In details, the first work, entitled “Extending the Internet of Things to the Future Internet through IPv6 support” is coming from the IoT6 European Project, where with the great contribution of Peter Kirstein (the European’s father of the Internet) is presented the Internet of Things architecture to integrate into IPv6 any kind of device, and make it accessible through WebServices and mobile platforms with protocols such as CoAP.

The second work is entitled “Ubiquitous Monitoring Solution for Wireless Sensor Networks with Push Notifications and End-to-End Connectivity”, this work presents a great solution from University of Beira Interior, Portugal and Pontifícia Universidade Católica do Paraná, (Brazil). This work address the issues regarding Push notifications protocols in order to make the Internet of Things scalable, this works presents these protocols are integrated to offer a proper link between mobile platforms (smart phones) and sensors, through a RESTful interface.

The third work is entitled “Lightweight MIPv6 with IPSec support: A mobility protocol for enabling transparent IPv6 mobility in the Internet of Things with support to the security”, this work has been carried out by the University of Murcia (Spain), where they are presenting how to enable mobility through IPv6-based protocols such as MIPv6, without forgetting the requirements in terms of efficiency and security. For that reason, that work presents a lightweight design and implementation for Contiki OS

of MIPv6 and IPSec, being the first MIPv6 implementation for constrained devices totally interoperable with the existing MIPv6 implementations for host-based devices.

The fourth work, entitled “Reducing Energy Waste through Eco-aware Everyday Things” is coming from the Deusto Institute of Technology – DeustoTech, University of Deusto (Spain). This work demonstrates how the small changes such as the turn off a coffee machine when it is not being used in the following hours will play a key role for the energy consumption optimization. This use case is a great example about the potential of the integration of the mobile platforms, social networks and Internet of Things, into our lifestyle.

The fifth work, entitled “Constructing the Web of Events from raw data in the Web of Things” from the Business School, Beijing Normal University, Beijing, (China), School of Information Engineering, China University of Geosciences Beijing, (China), and the Computer Science Department, Institute Mines-TELECOM/TELECOM Sud Paris, (France), this work presents the challenges for the Internet of Things is to convert all the capabilities and enablers being developed and potential to gather data continuously from everywhere into a real value for our lives. For that reason, how to filter and extract the relevant events and knowledge from all the RAW data gathered through the Internet of Things and Web of Things, is presented in this work.

Finally, the sixth work, entitled “Mobile Services Infrastructure for Frailty Diagnosis Support based on Gower’s Similarity Coefficient and Treemaps” from the MAMI Research Lab, Castilla-La Mancha University, (Spain), presents how to apply the Internet of Things and Web of Things into real problems in our current society, such as is the early detection and diagnosis of frailty for elderly people in Ambient Assisted Living (AAL) environments, since the current problems in the society such as the aging of the population.

To sum up, this Special Issues has collected 6 top papers from worldwide from Brazil in South America to China in Asia, going through the top universities in Europe such as University Colleague London (UCL) in United Kingdom, and also Telecommunication Providers such as TELECOM in France. These works present a bottom-up approach covering from the Internet of Things fundamentals based on its integration with the Future Internet architecture and IPv6, and also the protocols on top of IPv6 to support notifications, mobility and security. Then, it is presented how these solutions can be integrated in our lives, and demonstrating that some initial proof of concepts such as connect a coffee machine to Internet, made sense when you integrate it with the Social Networks and exploit the potential of the data. For that exploitation of the data, also a work is presented in order to explain how to exploit the data. Finally, all the value of the Internet of Things is presented in a use case for Ambient Assisted Livings offering early detection and diagnosis thanks to the power of the connectivity and the data.

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