

# **- RECIIF -**

*Red de Colaboración para la I+D+i en  
Internet del Futuro en Colombia*

## **Vision**

**Colombian Technology Platform in Future Internet  
Latin American Technology Platform  
[www.latin-american-technology-platforms.eu](http://www.latin-american-technology-platforms.eu)**

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## RECIIF's Vision

*"RECIIF will be for the year 2012 the national meeting place par excellence of the Colombian Industry and Academia, a national reference point for the government and the international reference point for the promotion and creation of R&D&I projects on Future Internet that contribute to the development of ICT sector and society in the country, allowing Colombian R&D&I efforts to contribute to the goal that all Colombians access the virtual world anytime, anywhere and through any device"*

Colombia is a country with high potential for research, innovation and technological development. Currently the country is building a content industry with high potential for development. The Software and Information Technology sector has been identified as one of the world-class sectors in Colombia and "Mobile telephony is one of the most dynamic industries in recent years"<sup>1</sup> in the country.

On August 7, 2005, the National Planning Department of Colombia officially published the document *Visión Colombia II Centenario: 2019*. In this vision, the Colombian government stated that by 2019 all Colombians must be informed and connected by efficient use of Information and Communication Technologies; Information will be an effective right and a tool for dissemination and adoption of knowledge that will promote economic development, material prosperity, social equity and democracy, and Information and Communication Technologies will be a means to freely access the information at reasonable costs and from any place in the Colombian territory<sup>2</sup>.

In addition to this vision, the Colombian government enacted on July 30 2009, Law 1341, also known as the ICT Law, which states that "research, sponsorship, promotion and development of Information and Communications technologies is a State policy that involves all sectors and levels of government and society, to contribute to the educational, cultural, economic, social and political development and to increase productivity, competitiveness, respect to inherent human rights and social inclusion."<sup>3</sup>

In line with these objectives and the vision of Colombia's government, RECIIF - the Collaborative Network for R&D&I in Future Internet will be for the year 2012 the national meeting place par excellence of the Colombian Industry and Academia, a national reference point for the government and the international reference point for the promotion and creation of R&D&I projects on Future Internet that contribute to the development of ICT

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<sup>1</sup> Cosette Castro. Industrias de Contenidos en Latinoamérica.

<sup>2</sup> Non-official translation - Colombia's National Planning Department: *Visión Colombia II Centenario: 2019*. <http://bit.ly/bWZu30>

<sup>3</sup> Non-official translation - Law 1341 de 2010: <http://bit.ly/cPeAkg>

sector and society in the country, allowing Colombian R&D&I efforts to contribute to the goal that all Colombians access the virtual world **anytime, anywhere and through any device.**

Similarly, the vision of RECIIF will be in line with the guidelines provided by the Law of Science and Technology, Act 1286 of 2009, aimed at "promoting and evaluating the university-business strategic alliance, in order to jointly develop science, technology and innovation in strategic sectors for economic and social development."<sup>4</sup> In order to do so, RECIIF will generate synergy between its members and will establish strong liaisons with equivalent international communities. It will encourage the participation in projects of high international standards and produce a strategic research agenda that will establish an R&D&I horizon for coming years, developing Colombian capacities to the international level.

Currently critical mass in research stems from research groups from the Academia. In 2010 there are 4239 research groups registered with the Administrative Department of Science, Technology and Innovation - Colciencias, among which 128 are dedicated to Computer Science and 553 are devoted to engineering<sup>5</sup>. The industry, meanwhile, focuses its efforts on innovation and the adoption and adaptation of technologies for application in the Colombian context, exploring new business models, designing new products and services that create value for their organizations. RECIIF will boost R&D&I in the Industry and will work towards setting up strong bounds between entities that carry out R&D&I activities in Future Internet at national, regional and international level, to expand the impact and recognition of Colombian activities, initiatives and products based on Colombia's technological and economic capability.

It will also focus on the continued analysis of the available state-of-the-art technologies, the emergence of new models and the state of the industry; the identification of market needs and future developments, as well as the demonstration of the potential application of research results into existing business processes and development of new products and services to promote the sectoral integration, industrial development, competitiveness and economic growth in Colombia.

In order to achieve RECIIF's Vision as a community, each thematic group of RECIIF (i.e. WG in Mobile and Wireless Communications, WG in Networked & Electronic Media, WG in Software and Services) has collected the opinion of different entities from the Academia and the Industry in order to identify R&D&I priorities. It is important to note that the following is a first approach to the vision of R&D&I activities, that will be strengthened with the increasing participation of new RECIIF members. However, R&D&I priorities are still being narrowed down and are subject to changes depending on the constant development of the sector, the participation of Colombian organisations in the definition of R&D&I priorities and Colombia's situation.

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<sup>4</sup> Colombian Law of Science and Technology: <http://bit.ly/aT02a0>

<sup>5</sup> COLCIENCIAS - Administrative Department of Science, Technology and Innovation

## **RECIIF’S VISION IN MOBILE AND WIRELESS COMMUNICATIONS**

According to the report of connectivity published in March 2010 by the Ministry of Information and Communications Technologies, “there was a 4.04% increase in the number of Internet connections to mobile subscription provider, from 915,280 in December 2009 to 952,271 at the end of March 2010.”, “mobile telephony has become one of the most dynamic industries in recent years.”<sup>6</sup> Colombia has submitted one of the highest rates of growth in broadband. Internet network would be the primarily element in which Internet of things, Internet of services and the Internet of people will be deployed. Therefore, R&D&I in Mobile and Wireless Communications is mandatory for setting up an appropriate communication environment. R&D&I activities may focus on three different topics, namely: Infrastructure, Applications and Business.

### **Infrastructure**

R&D&I on infrastructure would comprise different topics such as mobile broadband access networks, context-aware networks, sensor networks, wireless internet-connected object networks and self-organizing networks. It would also be important to deepen research in the convergence of fixed and mobile networks, the development of low-cost networks solutions and the integration of social networks to low-speed technologies, initially.

### **Applications**

As the Internet also grows towards an Internet of Users, content, knowledge and services; R&D&I would focus on mobile applications, machine-machine communications over mobile (M2M), Mobile Social Networking and Mobile Advertising. Nonetheless, one of Colombia’s greatest concerns is the improvement of quality of life and health services, therefore, giving m-Health a higher priority for R&D&I. However, R&D in interoperability issues and security assurance would still be performed.

### **Business**

Last but not least, it is important that R&D&I generate value to the business activities and therefore, it would also be important to undertake R&D&I activities on Business Models, especially for 4G networks.

## **RECIIF’S VISION IN NETWORKED & ELECTRONIC MEDIA**

Internet is evolving towards an Internet of people. People connect to social networks, share photos, videos, opinions (blogs, micro blogs, ...). Colombia is building an industry of content with high potential for development. Internet should provide the necessary tools to facilitate information management. Advertising should be more aware of the needs of users and the context. Internet will provide a more real, vivid and interesting experience to the user. It should be accessible by anyone and should become a support for the development

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<sup>6</sup> Cosette Castro. Industrias de Contenidos en Latinoamérica. Enero 2008.

of other economic sectors. R&D&I activities in Networked & Electronic Media comprise the study of different forms of content (3D, immersive, interactive, multimedia), where special focus should be made in four main categories: Creation of content and applications, Content presentation, Content management and Support Technologies.

### **Creation of content and applications**

New eye-catching forms of contents should be developed. R&D&I on network-aware applications, context aware applications, collaborative media creation, as well as tools for creating this content would be developed.

### **Content presentation**

R&D&I activities would improve the interaction between the user and the environment as well as collective user experience. Research would include topics such as mixed and augmented reality as well as new forms of content representation.

### **Content management**

Under this topic, the following subjects would be addressed: Content search, Content capture and adaptation, in order to provide quality content and the integrity of content. Also new methods and optimized services for content distribution and deployment are required.

### **Support Technologies**

Technologies are vital for supporting content delivery and distribution, therefore research on scalable converged networks, platforms and environments, cooperatives architectures and content aware networks is sought.

## **RECIIF’S VISION IN SOFTWARE AND SERVICES**

The concept of Software as a service has taken great force worldwide. Colombia is not indifferent to this phenomenon. As stated before, the Software and IT sector has been identified as one of the world-class sectors in Colombia. Within this sector, Colombia’s most attractive sub-segments are service-oriented architecture, programming “extreme” new business models, outsourcing and remote administration tools, web development, managing business processes.

R&D&I activities would focus on advanced software engineering topics (Methodologies of software development, testing tools, new approaches of Service oriented architectures), frameworks for software developments, platforms for service delivery, virtualization, cloud computing, Semantic Web and expert systems. Also R&D&I on Business Process Management and Business Intelligence, as well as on the development of new services and applications, in particular SW for Health and mobile applications and their interoperability are sought. Last but not least, security issues still an R&D&I concern of this thematic group.

In order to allow the vision of an informed and connected Colombian society become a reality, Industry and Academia must work together, promoting a coherent approach to R&D&I that allow all Colombians access the virtual world anytime, anywhere and through any device. It is no secret that today's Internet has some limitations, for “the Internet was never designed for how it is now being used”<sup>7</sup> and the world and its demands are constantly changing due to continuous innovation in the ICT sector. It is the aim of RECIIF to overcome these limitations by allowing Colombian R&D&I efforts to contribute to the goal that all Colombians access the virtual world anytime, anywhere and through any device.

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<sup>7</sup> DG Information Society and Media: Future Internet 2020: Visions of an industry expert group. May 2009.