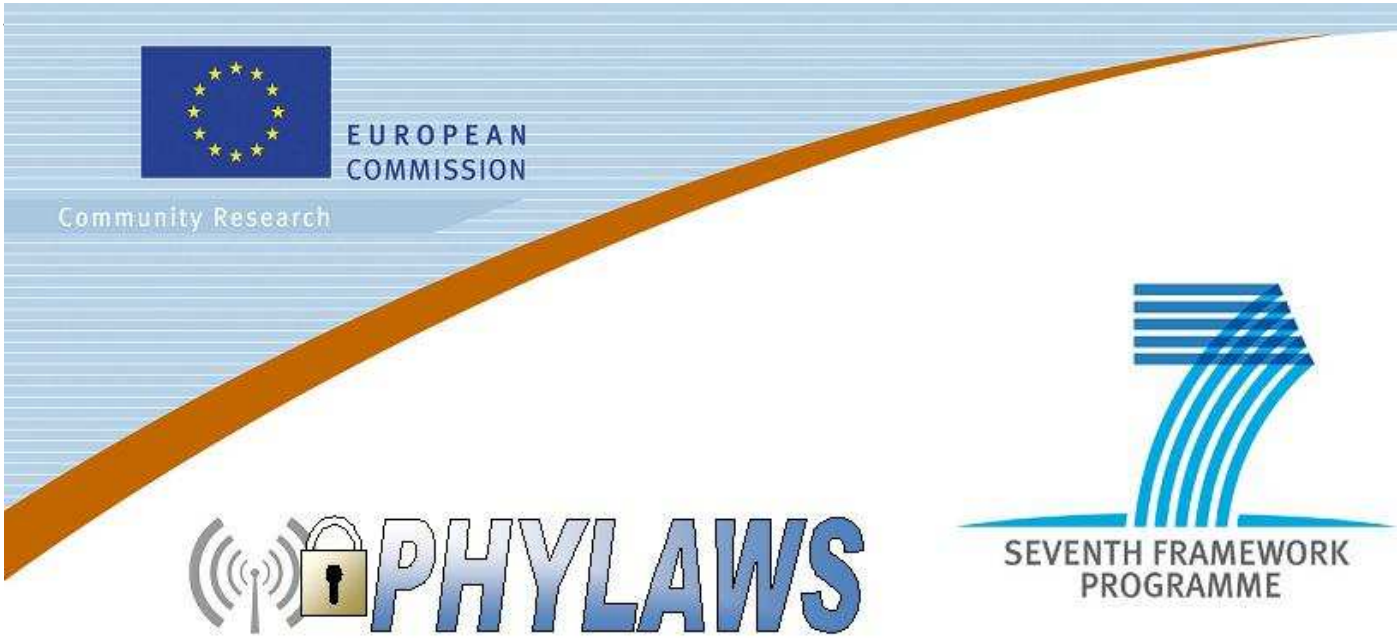

Project PHYLAWS (Id 317562)
PHYsical LAyer Wireless Security

Deliverable D1.7: Dissemination intermediate report

Version 1.1 - 12 / 05 / 2015

FP7 Collaborative Projects, Networks of Excellence, Coordination and Support Actions in Collaborative Projects, Research for the benefit of Specific Groups (in particular SMEs)

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Participant(s): all partners

Workpackage: WP1

Dissemination level: PU

Abstract: This deliverable provides the results and the plan for the dissemination activities of the PHYLAWS project, after 30 months of activity, given the new work plan after amendment 1. It covers the achieved participation to scientific conferences and publications and the participation of PHYLAWS to dedicated events.

Executive Summary

Deliverable D1.7 is the second among three reports dedicated to dissemination activities of PHYLAWS. It contains details on actual dissemination activities and an update of the anticipated ones for the rest of the project duration. The activities here described are:

- contribution to scientific conferences and scientific publications
- participation of dedicated PHYLAWS events
- involvement in clustering and other liaisons with relevant European projects
- dissemination towards stakeholders

Authors and Document History

Partner	Contributor	Date
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Change History

Version	Date	Description	Affected Sections
1.0	2015-05-07	First reviewed version	All
1.1	2015-05-12	Slight correction of version V1.0	Section 3.1

Project Summary

Wireless communications have become a universal way to access information for nearly every human around the world. This domination also presents major risks to society, owing to the widely recognized leaks and unsafe technologies in the current wireless networks. Basically all of the security today relies on bit level cryptographic techniques and associated protocols at various levels of the data processing stack, but these solutions have drawbacks and they are often not sufficiently secure. This difficulty is a major retarder to the progress of the digital society. In the recent years therefore, new approaches have been investigated in order to exploit security opportunities offered by the handling signals operating at the physical layer level. These works have been based on a fundamental analysis of the notion of security in the context of information theory. In a more concrete manner, the potential leaks and possible ways to avoid them have also started to be seriously addressed. The objective of the PHYLAWS project is to elaborate on this knowledge basis in order to develop focused and synthetic ways to benefit from wireless physical layer opportunities in order to enhance the security of wireless communications in an affordable, flexible and efficient manner. Efficient here means simple to implement, requiring easily developed and easily validated algorithms, but it also means techniques that will consume less resources, let that be in terms of energy (especially at the terminal level) and in terms of data consumption overhead (i.e. acting on the overall net spectral efficiency). The project outputs will thus benefit to a variety of existing and future standards for a large set of needs.

This objective will be reached through a suitably sized consortium combining an excellent academic expertise in order to address information theory fundamentals, to design optimal codes, to design furtive signal wave forms and versatile radio access protocols; a major research centre for the development and test of several competing techniques; a SME involvement perfectly aligned with the application targets; and a strong industrial involvement highly motivated by security in wireless networks as a manufacturer, as an end-user and as a provider of wireless communication services. The complementary skills inside the consortium will ensure both innovation and impact towards industrial applications, and they will assess validation of the commercial goals and validation of the society use relevance.

The project will benefit from recommendations and advices by an international Advisory Board, constituted of very high level personalities from governmental bodies, standardization bodies or academia. This Board will be one of the cornerstones of the project, based on the recognition that excellent technical developments and demonstrations will not be enough to ensure their wide spreading. Clearly, the project impact will largely benefit from a proper vision, aided by the AB, in order to penetrate standards and existing systems and ensure support from the major stakeholders.

Ultimately, PHYLAWS will facilitate the penetration of wireless technologies in the personal and professional sphere, by guaranteeing a more efficient safe access to the digital world through the future internet. This achievement will strongly impact the lives of citizens and will very much contribute to trustworthy ICT in the following years.

Administrative and contract references

[PHYLAWS_GA-A] PHYLAWS Grant Agreement, referenced FP7-ICT-317562-PHYLAWS version date 2012-07-03, part A

[PHYLAWS_GA-WP] PHYLAWS Grant Agreement, referenced FP7-ICT-317562-PHYLAWS version date 2012-07-03, Work Plan

[PHYLAWS_GA-AM] PHYLAWS Amendment n°1 to Grant Agre ement FP7-ICT-317562-PHYLAWS version date 2015-03-10.

[PHYLAWS_GA-DOW2] PHYLAWS Grant Agreement, referenced 317562 version V2.2 date 2014-12-19 (revised Description of Work - part B of the Grant Agreement).

[PHYLAWS_GA-WP2] PHYLAWS Grant Agreement, referenced FP7-ICT-317562-PHYLAWS version date 2014-12-19 (revised Work Plan).

[PHYLAWS_D.1.1v2] PHYLAWS Management plan – updated version V2 version date 2015-05-31.

[PHYLAWS_D.1.6] PHYLAWS Dissemination plan – version V1 date 2013-01-31.

[PHYLAWS_D.1.9] PHYLAWS Standardization plan – version V1 date 2013-01-31.

[PHYLAWS_D.1.10] PHYLAWS Standardization plan – Intermediate report - version V1 date 2015-05-07.

Other references

[PHYLAWS_WS] Phylaws Web site: www.phylaws-ict.org

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[RAS_WD2.0] White paper “High capacity PHY for future radio access and 5G”, edited by Paulo Marques.

[RAS_WD3.0] http://ec.europa.eu/information_society/newsroom/image/whatis5g_8919.jpg http://ec.europa.eu/information_society/newsroom/cf/dae/redirection.cfm?item_id=20996&newsletter=137&lang=default

[COST_IC1004.1] “A Disc of Scatterers Based Radio Channel Model for Secure Key Generation”, Taghrid Mazloum and Alain Sibille, COST IC1004, 13th MCM, Ghent, Belgium (2013)

[COST_IC1004.2] “Ray Tracing Simulations of Indoor Channel Spatial Correlation for Physical Layer Security”, Francesco Mani, Enrico M. Vitucci, Taghrid Mazloum, Alain Sibille and Vittorio Degli Esposti, COST IC1004, 14th MCM, Ferrara, Italy (2014)

[WINFORUM_SSAR]: “WINNF Spectrum Sharing Annual Report” WINNF-14-P-0001-V1.0 edition 2014, published by Lee Pucker and al. Web site http://groups.winnforum.org/Reports.

Acronyms and Abbreviations

COST	COoperation in Science and Technology
DoW	Description of Work
EC	European Commission
FP7	7th Framework Programme
ICT	Information and Communication Technologies
IEEE	Institute of Electrical and Electronics Engineers
IET	Institution of Engineering and Technology
IP	Integrating Project
PHYSEC	PHYsical SECurity
QUANT	Quantitative
SME	Small and Medium Enterprise
STREP	Small and medium-scale focused research project
TBD	To Be Defined
WP	Work Package
Y1	Year 1
Y2	Year 2
Y3	Year 3

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1. Introduction

This deliverable “Dissemination intermediate report” is intended to update the plan of activities regarding the dissemination activities carried out the PHYLAWS project at mid-term, and to give account of the achieved dissemination activities at the date of delivery. It is organized in relation to the main aspects of these activities:

- web site
- scientific dissemination
- dissemination towards stakeholders and future users

It is reminded that standardization activities, together with the associated specific disseminations, are not part of this report, being covered by another dedicated task and deliverables D1.9 and D1.10.

Some quantitative goals have been defined in the DoW and are recalled below:

Objective	Indicator	Nature
Scientific dissemination	Number of refereed international communications or publications (IEEE or similar): 17	QUANT
Scientific/technology users dissemination	Number of workshops: 3	QUANT

Table 1: dissemination performance indicators

2. Web site

The specifications of the PHYLAWS web site have been detailed in the first version of this report (deliverable D1.6, provided at M3). In this section, we account for the actual availability of the web site, in relation with these specifications.

2.1. Actual public web site

The home page of the PHYLAWS portal is shown in Figure 1. The publicly accessible contents are as follows:

- List of partners with their web sites
- Advisory board members with their affiliations and main position
- Up-to-date deliverables. At the delivery date of the current report, 7 deliverables are available :
    - D1.6 - Dissemination planning report
    - D1.9 - Standardization planning report
    - D2.1 - Analysis of threats, countermeasures and self-protection techniques
    - D2.2 - security architectures in wireless terminals
    - D2.3 - Fundamental aspects of Physical Layer Security
    - D2.4 - New opportunities provided by modern wave forms new security protocols and sensing/measure of radio environments
    - D3.1 - Channel based random generators - Interim report

  This part will be upgraded before the next PPR with deliverables due by the consortium during the period 2 (deliverables D1.7, D1.10, D4.1).
- Events. Currently the web site redirects towards the WinnComm 2013 web portal

- Publications. Apart from general presentations on the PHYLAWS project, a set of conference presentations by the consortium are readily downloadable. This part will be upgraded before the next PPR with papers publishers by the consortium during the period.
- A contact page, which allows to send requests to the coordinator by whoever wishes

Figure 1: Upper part of the PHYLAWS Website

2.2. Private zone (authentified access)

The private zone is fully compliant with the specifications listed in deliverable D1.6. The home page is shown in Figure 2.

Figure 2: Home page of the private zone

3. Scientific dissemination and dissemination towards stakeholders

In this section we provide a detailed account about the achieved dissemination from the project beginning until the date of delivery of D1.7.

3.1. Achieved participation to scientific dissemination

In deliverable D1.6, the following quantitative goals have been identified regarding the contribution of the PHYLAWS partners to scientific symposia, conferences, workshops & related dissemination activities:

- 2 international communications / academic partner / year ($\rightarrow$ 12 in total)
- 1 international communication / other partner ($\rightarrow$ 3 in total)

In the following table, the activities achieved by the consortium until the delivery date of the present report (30 months, to be compared to 48 months in total) are listed. It can be noticed that the conferences cover differing scientific communities and audiences, meaning that the dissemination target is suitably realized.

A second remark is that the quantitative objectives over the whole project are already achieved and even exceeded.

N°	Type	Title	Main authors	Title	Dates	Publisher	Place	Year
1	Seminar	Génération de clés secrètes à partir du canal radio	Taghrid Mazloum et Alain Sibille	AREMIF	May 27		Paris, France	2013
2	Article + Conference presentation	A Disc of Scatterers Based Radio Channel Model for Secure Key Generation	Taghrid Mazloum and Alain Sibille	COST IC1004, 13th MCM	Sept. 25-27		Ghent, Belgium	2013
3	Article + Conference presentation	Security risks in the short-range communication of ubiquitous application	Antti Evesti, Jani Suomalainen, and Reijo Savola	International Conference for Internet Technology and Secured Transactions	Dec 9-10	IEEE Xplore	London, UK	2013
4	Article + Conference presentation	A Disc of Scatterers Based Radio Channel Model for Secure Key Generation	Taghrid Mazloum, Francesco Mani and Alain Sibille	EUCAP 2014	April 6-11	IEEE Xplore	The Hague, netherlands	2014
5	Article + Conference presentation	Ray Tracing Simulations of Indoor Channel Spatial Correlation for Physical Layer Security	Francesco Mani, Enrico M. Vitucci, Taghrid Mazloum, Alain Sibille and Vittorio Degli Esposti	COST IC1004, 14th MCM	Feb. 5-7		Ferrara, Italy	2014
6	Article + Conference presentation	Security pairings using physical layer properties of wireless communications	Jani Suomalainen, Antti Evesti, and Adrian Kotelba	International Conference on Privacy and Security in Mobile Systems	May 11-14	IEEE Xplore	Aarlborg, Denmark	2014
7	Article + Conference presentation	Analysis of Alice-Bob-Eve scenarios for secret key generation from random channels	Alain Sibille	URSI GASS	Aug. 17-23	IEEE Xplore	Beijing, China	2014
8	Article + Conference presentation	Performance of secret key generation in non stationary channels	Taghrid Mazloum and Alain Sibille	EUCAP 2015	April 13-17	IEEE Xplore	Lisbon, Portugal	2015
9	Article + Conference presentation	Ray Tracing Simulations of Indoor Channel Spatial Correlation for Physical Layer Security	Enrico M. Vitucci, Francesco Mani, Taghrid Mazloum, Alain Sibille and	EUCAP 2015	April 13-17	IEEE Xplore	Lisbon, Portugal	2015

			Vittorio degli Esposti					
10	Article + Conference presentation	Active and passive eavesdropper threats within public and private civilian wireless networks - existing and potential future countermeasures	François Delaveau, Antti Evesti, Jani Suomalainen, Reijo Savola , Nir Shapira	Winncomm 2013	June 11	Winncomm Forum	Munich, Germany	2013
11	Article + Conference presentation	PHYSEC concepts for wireless public networks – introduction, state of the art and perspectives	Cong Ling, François Delaveau, Erice Garrido, Alain Sibille, Jean-Claude Belfiore	Winncomm 2013	June 11	Winncomm Forum	Munich, Germany	2013
12	Seminar	Providing Radio Advantage for Establishing Secrecy by Tag Signals	David Depierre, Renaud Molière, François Delaveau	GDR Isis on Physec	May 22	GDR ISIS	Paris, France	2014
13	Article + Conference presentation	Towards a key-free radio protocol for authentication and security of nodes and terminals in advanced waveforms	Eric Nicollet, François Delaveau, Renaud Molière, Christiane Kameni, Claude Leménager, Taghrid Mazloum et Alain Sibille	Winncomm 2015 San Diego	Marsh 26	Winncomm Forum	San Diego, USA	2015
14	Article + Conference presentation	Tag Signals for Early Authentication and Secret Key Generation in Wireless Public Networks	Renaud Molière, Christian Kameni, Claude Leménager, François Delaveau, Taghrid Mazloum et Alain Sibille	EuCNC2015	June 29-July 2	IEEE Xplore	Paris, Issy les Mx, France	2015
15	Article + Conference presentation	Secrecy gain, flatness factor, and secrecy-goodness of even unimodular lattices	Fuchun Lin, Cong Ling, and Jean-Claude Belfiore	IEEE ISIT 2014	June 29-July 4	IEEE Xplore	Honolulu, USA	2014
16	Article + Conference presentation	Achievable diversity-rate tradeoff of MIMO AF relaying systems with MMSE transceivers	Changick Song and Cong Ling	IEEE ISIT 2014	June 29-July 4	IEEE Xplore	Honolulu, USA	2014
17	Article + Conference presentation	Lattice Gaussian Coding for Capacity and Secrecy:Two Sides of One Coin	Cong Ling and Jean-Claude Belfiore	IZS on Communications 2014	February 26-28	ETH-Zürich	Zürich, Switzerland	2014
18	Article + Conference presentation	Achieving the AWGN channel capacity with lattice Gaussian coding	Cong Ling and Jean-Claude Belfiore	IEEE ISIT 2013	July 7-12	IEEE Xplore	Istanbul, Turkey	2013
19	Article + Conference presentation	MIMO broadcasting for simultaneous wireless information and power transfer: Weighted MMSE approaches	Changick Song, Cong Ling, Jaehyun Park and Bruno Clerckx	Globecom Workshops 2014	December 8-12	IEEE Xplore	Austin, USA	2014
20	Article + Conference presentation	Independent Metropolis-Hastings-Klein Algorithm for Lattice Gaussian Sampling	Zheng Wang and Cong Ling	IEEE ISIT 2015	June 14-19	IEEE Xplore	Hongkong, China	2015
21	Article + Conference presentation	On the capacity of the modulo lattice channels	Hamed Mirghasemi and Jean-Claude Belfiore	51st Allerton Conference	September	IEEE Xplore	Allerton, IL, USA	2013
22	Article + Conference presentation	The un-polarized bit-channels in the wiretap polar coding scheme	Hamed Mirghasemi and Jean-Claude Belfiore	IEEE Wireless VITAE 2014	May 11-14	IEEE Xplore	Aalborg, Denmark	2014

23	Article + Conference presentation	Codes for wireless wiretap channels	Jean-Claude Belfiore	IEEE ITW 2014	November 2-5	IEEE Xplore	Hobart, Australia	2014
24	Article + Conference presentation	The semantic secrecy rate of the lattice Gaussian coding for the Gaussian wiretap channel	Hamed Mirghasemi and Jean-Claude Belfiore	IEEE ITW 2014	November 2-5	IEEE Xplore	Hobart, Australia	2014

Table 2: achieved scientific conference communications

3.2. Publications in scientific journals

In deliverable D1.6, the following quantitative goals have been identified regarding the contribution of the PHYLAWS partners to scientific symposia, conferences, workshops & related dissemination activities:

- 1 international journal paper / academic partner (→ 2 in total)

In the following table, the activities achieved by the consortium until the delivery date of the present report (30 months, to be compared to 48 months in total) are listed.

N°	Type	Title	Main authors	Title	Dates	Publisher	Year
1	Article	Semantically secure lattice codes for the Gaussian wiretap channel	Cong Ling, Laura Luzzi, Jean-Claude Belfiore, and Damien Stehle	IEEE Trans. Inform. Theory	October	IEEE Xplore	2014
2	Article	Achieving AWGN channel capacity with lattice Gaussian coding	Cong Ling and Jean-Claude Belfiore	IEEE Trans. Inform. Theory	October	IEEE Xplore	2014

Table 3: achieved journal publications

3.3. Organization of PHYLAWS dedicated events and dissemination towards stakeholders

3.3.1. PHYLAWS dedicated events

The planned events as anticipated at the project start were as follows: :

- 1 joint international workshop or special session on PHYSEC around the end of Y1
- 1 joint international workshop or special session on PHYSEC around the end of Y2
- 1 dedicated PHYLAWS workshop at the end of Y3

(→ 3 events in total)

The two first events had the objective to gather international competencies in the area of wireless physical layer security, mainly European and mainly academic, in order to ensure an excellent integration of PHYLAWS research in the international up-to-date effort on the topic, and at the same time ensure a good awareness of these communities into what's going on within PHYLAWS (cross-fertilization).

The last event would be more focused on PHYLAWS results, assumed to be applicable to real world use cases.

The first of these events was fully realized shortly before the end of Y1: a special session about Physical Layer Security took place during the PIMRC congress in London (Sept. 8, 2013). It was organized and chaired by PHYLAWS (organizers: Alain Sibille - TPT, Jean-Claude Belfiore - TPT, Cong Ling - ICL). 15 papers have been fully reviewed and selected by the program committee of the session, which are listed in the table below. The

presentations have been critically discussed in terms of pros & cons on scientific and technical aspects and have been useful within the PHYLAWS consortium internal exchanges.

Physical Layer Security for Wireless Sensor Networks
Multi-Objective Beamforming for Secure Communication in Systems with Wireless Information and Power Transfer
Detection of Pilot Contamination Attack Using Random Training and Massive MIMO
Semantically Secure Lattice Codes for the Gaussian Wiretap Channel
Physical Layer Security of MISO TAS Wiretap Channels with Interference-Limited Eavesdropper
Secrecy Outage in Random Wireless Networks subjected to Fading
Hybrid Relaying and Jamming for Secure Two-Way Relay Networks with Passive Eavesdroppers
Enhancing the Secrecy Performance in MIMO Wiretap Channels: A Novel Transmit Antenna Selection Scheme
Secure Opportunistic Scheduling with Transmit Antenna Selection
Statistical Modelling of Chaos-based Non-coherent Double-Dither Code Tracking
Wireless device authentication through transmitter imperfections - measurement and classification
Self-Jamming: Who Wins? An Implementation Study
Physical Layer Security via Secret Trellis Pruning
Throughput Enhancement of Secondary Transmitter under Target Physical Layer Security Rate
Physical Layer Security Enhancement With Generalized Selection Diversity Combining

Table 4: program of the special session on physical layer security at PIMRC 2013

Figure 3: Pictures of the special session on physical layer security at PIMRC 2013

The 2nd event has not taken place yet, as such, however PHYLAWS has been involved in a set of specific dissemination events that are detailed below (RAS cluster, Winncomm Forum)

In addition, note that Phylaws is invited as a panelist at the workshop on Physical Layer Security to be held on June 8, 2015 at the IEEE International Conference on Communications (ICC) London, UK.

N°	Type of activities	Main leader (O: organizer ; C: contributor)	Title	Event / Details	Date	Place	Type of audience).	Size of audience	Countries addressed
1	Special session	TPT (O), IC (O)	Special session on Physical Layer security	PIMRC 2013	Sept. 8, 2013	London, UK	Scientific + industry	40	All (world level event)
2	Seminar - paper	TCS (C)	Several contribution to RAS Cluster meeting (4) and papers	RAS Cluster	on going 2013	Brussels, Belgium	Coordinator of EC projects, EC members, invited persons	50	Europe
3	Seminar - paper	TCS (C)	Several contribution to RAS Cluster meeting and papers	RAS Cluster	on going 2015	Brussels, Belgium	Coordinator of EC projects, EC members, invited persons	50	Europe
4	Workshop session	TCS (C)	Panelist within a Workshop session	IEEE ICC 2015	2015, June 8	London, UK	Students, scientists, Indrusties, regulators	50	All (world level event)

Table 5: Special sessions, workshops and related

3.3.2. Dissemination towards stakeholders

For a maximum impact of the project results, it is important to make the main objectives and the progress be known from potential stakeholders, able to use or exploit the PHYLAWS technology. In deliverable D1.6, the main stakeholders have been identified as follows:

1. wireless products manufacturers (large companies, techno-providers)
2. software developers
3. major telecom operators
4. local operators (e.g. WIFI hotspots)
5. scientific community: universities, research centers

The scientific community is widely addressed through scientific conferences, publications and events (see sections 0 and 3.3.1). The other stakeholders, concerned by exploitation of the project results, will get more and more involved as the project progresses and its results will get more solidly communicable toward stakeholders. The web site already allows the public access to the project goals, structure and public deliverables (see section 2.1).

This being said, the PHYLAWS advisory board, apart from its role in order to critically examine the project research topics and suggest high level progress directions, can also act as a vector of dissemination toward potential stakeholders outside the consortium. The AB members and their affiliation are recalled below. These are well known personalities whose influencing capability at academic, governmental and industry level are important. The 1st AB meeting (October 2, 2013), within which the dissemination perspectives have been discussed, has been a first milestone paving the way toward further communication and involvement within these communities.

A concrete action resulting from the exchanges with the AB has been the involvement of PHYLAWS in the Wireless Innovation Forum (SDR Forum Version 2.0), especially in relation with the “WINNF Spectrum Sharing Annual Report” (see ref. [WINFORUM_SSAR], for security aspects relevant to Physical Layer.

In particular,

- Two presentations have been given at the Winncomm Forum in Münich, Germany, June 2013.
- One presentation has been given at the Winncomm Forum in San Diego, USA California, March 2015.

This is more detailed in deliverable D1.10 PHYLAWS Standardization plan – Intermediate report.

1 **Professor Lee Pucker** MSc. PMC. Chief Executive Officer. The Wireless Innovation Forum Canada
2 **Professor Doctor Srdjan Capkun** Associate Professor of Computer Science, ETH Zurich. Internationally known expert in physical layer for security, computer security, privacy, networking. CH
3 **Doctor Scott W Cadzow** Chief Executive Officer of C3L company Chair or vice-chair of ETSI ITS WG5 (Security), TETRA WG6 (Security), TA SFPG (Security), ISO TC204.16.7 (Security) and specialist task force expert for security in ETSI TISPAN, ETSI MTS, ETSI HF. UK
4 **Professor Joseph Mitola** Fellow of the IEEE US Advisor Regarding Trustable Cognitive Systems US
5 **Doctor Peter Mueller** IBM Zurich Research Laboratory CH
6 **Mr Philippe Aubineau** Counsellor, ITU-R Study Group 1, CPM and SC Study Group Department. Radiocommunication Bureau International Telecommunication Union. Genève CH

Table 6: Composition of the advisory board

Figure 4: View of the AB meeting in Telecom ParisTech premises on Oct. 2, 2013

4. Clustering activities

In D1.6, a set of potential projects or cooperative actions has been identified, for which a mutual benefit could be anticipated regarding the dissemination of PHYLAWS research results and, conversely, regarding the possibility to get inputs from these project participants I terms of added value or difficulties in implementing PHYSEC concepts for future networks.

Since then, two of them have been considered for further exchanges, which are:

- ICT FP7 call 8 project DUPLO (STREP)
- COST Action IC1004

The first (DUPLO) is project intended to demonstrate the potential of full duplex techniques for enhancing the capacity of wireless networks. The project has started at the end of 2012 and is thus ideally compatible with the time line of PHYLAWS. The benefit for PHYLAWS is that full duplex techniques are among physical layer techniques that can help ensuring a more safe communication between legitimate entities through the masking of a received signal by a transmitting one, with various possible schemes to make life difficult for an eavesdropper.

Since THALES is part of the DUPLO consortium, internal exchanges have taken place, allowing an accurate vision on the anticipated capabilities and technical requirements of full duplex techniques.

The second (COST IC1004) is an European cooperation Action under the COST framework, which gathers more than 100 experts from Europe and beyond 3 times a year, in order to confront research results in the area of wireless networks. The activities cover antenna systems and radio channel modeling, signal processing for transmission and reception, and networking of wireless devices. Telecom ParisTech being part of the management committee of this Action had a very good position to foster PHYSEC concepts as part of the techniques discussed, which has been done in two presentations at management committee meetings ([COST_IC1004.1], [COST_IC1004.2]).

In addition, the consortium is part of the “Radio Access and Spectrum” (RAS) cluster of FP7 (Figure 5). It has, in particular, contributed to the white paper “High capacity PHY for future radio access and 5G”. It has also been involved in the newsletters issued from the RAS cluster regarding security in future networks (i.e. 5G) and the potential impact of physical layer techniques ([RAS_WD3.0]).

Figure 5: participation to the RAS cluster (http://www.ict-ras.eu/index.php/ras-projects)

5. Perspectives

The perspectives regarding future dissemination activities until the end of the project can be foreseen as follows:

- Continuous update of the public web site with publications, publicity of PHYLAWS and PHYSEC relevant events and deliverables
- Pursued dissemination towards the scientific community through participation in conferences and journal publications
- Participation in special sessions or workshops related to PHYSEC in the context of scientific events or events accessible to a wider audience mixing academia and industry
- Organization by PHYLAWS of at least one event allowing to disseminate the project outputs as a whole, combining scientific and implementation aspects of PHYSEC
- Specific dissemination through dedicated channels of the project impact perspectives susceptible of interest for potential stakeholders, as identified in deliverable D1.6

6. Conclusion

This document contains the status on dissemination activities carried out till the delivery date of this report. The final dissemination report will be provided at M48, according to amendment 1 [PHYLAWS_GA-AM] and revised DoW [PHYLAWS_GA-DOW2].