



**SEVENTH FRAMEWORK PROGRAMME
THEME ICT-1-1.1
“Network of the future”**

Project acronym: EFIPSANS

Project full title: Exposing the Features in IP version Six protocols that can be exploited/extended for the purposes of designing/building Autonomic Networks and Services

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Summary of Deliverable D6.1

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Abstract:	This document contains a summary of the dissemination and exploitation-related activities of the EFIPSANS project during the first twelve months of the project and an overview of the anticipated

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activities related to these topics during the remainder of the programme.

The Dissemination and Use Plan (DUP) is a living document, regularly reviewed and updated by the project partners.

Keywords

EFIPSANS, dissemination, exploitation

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1. Objectives

1.1 Deliverable Objectives

Deliverable D6.1 is the first published version of the EFIPSANS Dissemination and Use Plan. The Dissemination and Use Plan is a living document containing details of all the activities undertaken by the consortium partners as part of Task 6.2 - Dissemination and Training, and Task 6.3 - Exploitation.

In common with all Integrated Projects, the Dissemination and Use Plan has to address interaction with a variety of interested parties and stakeholders as well as the plans of the partners. As a result the activities arising from the two tasks indicated above are wide ranging: from plans to enable engagement of the general public with a subject which is technically complex yet critical for communications which they rely on, to involvement with the EU IPv6 Task Force which is composed of leading experts in the area and has sole authority for for IPv6 protocol standards.

During the early stages of the project the exploitation plans are necessarily rather general, although the partners already have a clear expectation of their anticipated results and benefits from participation, in an outline plan for each partners' expectations given in section B2.3 of the Technical Annex. A plan for protection of Intellectual Property generated as part of the project has also been agreed. The specific exploitation plans are limited at this early stage of the project, and two additional tables, the list of applications for patents, trademarks and registered designs and the overview table of exploitable foreground will be included in future updates.

1.2 Objectives for Dissemination and Training

The objectives for dissemination can be summarised as follows:

- Provision and population of a public website for the project
- Promotion and dissemination of project results
- Internal dissemination
- Workshops
- Training activities
- Publications and conference presentations
- Public demonstrations
- EU concertation meetings
- Liaisons with other projects and initiatives

The links that EFIPSANS seeks to build are to fulfil the following goals:

- Ensuring that EFIPSANS developments are in-line with emerging standards
- Contribution to formulation of appropriate standards
- Stimulation of discussions regarding extensions of IPv6 for autonomicity, between researchers, users, operators and vendors resulting in innovation

1.3 Objectives for Exploitation

Each partner currently has an initial plan to exploit the results from the EFIPSANS project given in section 2.3 of the Technical Annex and exploitation potential is an important consideration within the overall project. In the early stages of a project it is not practical to make an exhaustive list of possibilities, but later in the project a table of exploitable foreground and the associated exploitable products and measures will be constructed.

2. Innovations and Achievements

2.1 Public website

The EFIPSANS website can be found at www.efipsans.org. Visitors searching for IPv6 autonomic networking via Google also find the site at the top of the search results. The site so far contains

- An overview of the project
- News page
- Information on the consortium members
- An indication of the structure of the project
- Links to other relevant projects and initiatives
- Downloadable documents about the project
- A list of EFIPSANS publications
- An events list
- Links to the co-ordinator
- The EFIPSANS survey

Figure 1: Snapshot of EFIPSANS public website home page



The primary purpose of the site is to make available project-related information of interest to the rest of the international community and the public in general. The site also has the opportunity for users with a user name and password to log in and get access to other, potentially confidential information and reports. This is not a facility used for the execution of the project, however, it is primarily aimed at providing information to reviewers in an easily accessible way. Although the

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website acts as a resource for partners wishing to carry out dissemination activities, day to day communication and deliverable management is carried out via the project wiki, an internal communication tool quite separate to the public website.

2.2 Dissemination activities

Continuous contact with interested parties from all possible viewpoints and stakeholdings in the area of use of IPv6 for autonomic networking applications is important to the project. The consortium therefore started by inviting IETF Mobility expert Charlie Perkins from Nokia US and the current chair of the ACF Forum, John Strassner, to the project kick-off meeting. A list of dissemination activities undertaken by the project is given in section 4 of this report. As would be expected in the first six months of a three-year project, many of the activities involve internal meetings for discussion and dissemination. However, the project partners have taken full advantage of opportunities to disseminate the project later in the year at several IPv6 summits, and strong links to the FIA have been maintained.

2.2.1 Review of opportunities for future dissemination

The partners intend to maintain the links to existing dissemination routes, and as the number of publications increases, papers given at conferences will also offer dissemination opportunities. Other dissemination routes are also available which have not yet been utilised to best effect:

- EFIPSANS is well-placed to liaise with the EU IPv6 task force and the IPv6 Forum since the University of Luxembourg, a partner in the project, is the home of these organisations.
- A range of opportunities have been identified to engage with projects and initiatives working on IPv6. Examples are 6DISS, ANEMONE, 6NET and GO4IT.
- The project has also identified opportunities to work with organisations such as OECD, ENISA, the Internet Society and ICANN since issues of interest to each of these corresponds to activities within EFIPSANS.

2.2.2 Contributions to White Papers

EFIPSANS has contributed to two White Papers, completing the questionnaire to EC FP7 D1 projects on Standardisation and Regulatory Roadmaps for the eMobility White Paper, and engagement with the Future Internet Assembly Initiative Self-Management White Paper where the response is currently being drafted.

2.3 Standardisation

The most notable success in the first year has been the agreement to establish an Industry Standardisation Group within ETSI titled 'Autonomic Network Engineering for Self-Managing Networks'. The ISG will focus on the Generic Autonomic Network Architecture (GANA) which has been an important part of the work within the overall project. The Terms of Reference have been drafted and the group was scheduled to kick off in January 2009.

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A review of other relevant standardisation bodies has indicated that the other organisations most relevant to EFIPSANS are:

- IETF - related to potential extensions to IPv6 protocols identified within the project
- ACF - the Specifications of Autonomic Behaviours of Decision-Making-Elements being designed within EFIPSANS will be contributed to the ACF
- 3GPP-LTE - the recommendations produced by 3GPP-LTE for self-organising, self-configuring and self-optimising networks are being considered by EFIPSANS for incorporation in some networking environments being designed within the project
- NGMN - NGMN also have recommendations which will be considered in the same way as 3GPP-LTE above
- OMG - EFIPSANS is working on producing a GANA meta-model along with an associated methodology and tool chain for model-based systems development
- 3G-CDMA - some autonomic Decision-Making-Elements in EFIPSANS use functionalities also addressed by 3G-CDMA
- ITU - ITU are a dissemination target for the specifications being produced within EFIPSANS
- WLAN-WiFi - some autonomic Decision-Making-Elements in EFIPSANS use functionalities also addressed by WLAN-WiFi.

2.4 Liaisons outside the EU

EFIPSANS has established a number of opportunities for exchange of know-how, joint trials dissemination and training events outside the EU.

- A worldwide co-operation effort with similar Asian projects has been started, especially with Korea, India, Taiwan and Australia under the auspices of the IPv6 Forum
- Joint workshops were held at different Future Internet events together with E3, SOCRATES, 4WARD, AUTOI and AUTONONETS, where exchange of ideas, presentation of results and alignment of concepts are major goals. There is potential for further collaboration in the future.

2.5 Publications

The publications associated with the project are listed in section 3. At this relatively early stage of the project, a list of papers submitted as well as those accepted is provided in section 3 of this document, and no attempt has been made to qualify which are the most important publications.

As of the end of December 2008, over 20 papers had been accepted for publication and presentation at conferences, while additional papers have either been submitted for publication or are currently under preparation.

2.6 Exploitation

Exploitation of the outcomes of the project has not been a major focus during the first year since at this stage the exploitation potential of the work is not yet sufficiently clear. However it should be noted that the GANA itself is major exploitable output so far, as it provides a holistic Reference Model for Self-Management within node and network, that can be followed and exploited by both evolutionary and revolutionary approaches of Future Internet..

Each consortium member has provided a summary of their expectations with regard to exploitation arising from the project. Later versions of this document will contain summaries of the foreground IP generated and the exploitation plans of partners both industrial and academic.

3. List of scientific (peer reviewed) publications

No	Title	Authors	Title of periodical	Date / No	Publisher	Place of publication	Year	Pages	Permanent identifier	Open access
1	An Opportunistic Combined Power and Rate Allocation Approach in CDMA Ad Hoc Networks	T. Kastrinogiannis, V. Karyotis, S. Papavassiliou	Proc. of IEEE Sarnoff Symposium on Advances in Wired and Wireless Communications,	April 2008	IEEE		2008	1-5	TBA	No
2	QoS Provisioning in Wireless Data Networks under Non-Continuously Backlogged Users	T. Kastrinogiannis, S. Papavassiliou	Proc. 6th Int. Symposium on Modelling and Optimisation in Mobile, Ad-Hoc and Wireless Networks and Workshops (RAWNET 2008)	April 2008		Berlin	2008	71-76	TBA	No
3	On the Problem of Joint Power and Rate Control in CDMA Ad Hoc Networks	T. Kastrinogiannis, V. Karyotis, S. Papavassiliou	Proc of 3rd International Symposium on Wireless Pervasive Computing (ISWPC),	May 2008			2008	78-82	TBA	No
4	Monitoring Issues for Autonomic Networks: The EFIPSANS Vision	A. Liakopoulos et al	1st European Workshop on Mechanisms for the Future Internet, 2008, 10-11 July 2008, Salzburg, Austria.	July 2008		Salzburg	2008		TBA	No
5	Utility-based Uplink Power Control in CDMA Wireless Networks with Real-Time Services	T. Kastrinogiannis, EE Tsiropoulou, S. Papavassiliou	International Conference on Ad-hoc Networks and Wireless	September 2008, vol 5, 198		Sophia Antipolis	2008	307-320		

No	Title	Authors	Title of periodical	Date / No	Publisher	Place of publication	Year	Pages	Permanent identifier	Open access
6	Document Based Network and System Management, Utilizing Autonomic Capabilities for Enterprise Management Integration	E. Hoefig, P Deussen	Proc. 2nd ACM International Conference on Autonomic Computing and Communication Systems (Autonomics 2008),	September 2008		Turin, Italy	2008		TBA	No
7	Utility Based Short-Term throughput driven scheduling approach for efficient resource allocation	T. Kastrinogiannis, S. Papavassiliou	Wireless Personal Communications (special issue on Resource and Mobility Management and Cross-Layer Design for the support of Multimedia Services in Heterogeneous Emerging Wireless Networks)	November 2008 (online)	Springer					
8	Game theoretic distributed uplink power control for CDMA networks with real-time services	T. Kastrinogiannis, S. Papavassiliou	Computer Communications Journal	vol 32 iss 2 Feb 09	Elsevier		2009	376-386	TBA	No
9	Joint Throughput Maximization and Fair Uplink Transmission Scheduling in Wideband CDMA Systems	S. Papavassiliou, C. Li	EURASIP Journal on Wireless Communications and Networking	To appear	Hindawi					
10	Uplink Power Control in QoS-aware Multi-Service CDMA Wireless Networks	E.E. Tsiropoulou, T. Kastrinogiannis, S. Papavassiliou	Journal of Communications (JCM)	To appear	Academy Publisher, Journal of Communications (JCM)					

No	Title	Authors	Title of periodical	Date / No	Publisher	Place of publication	Year	Pages	Permanent identifier	Open access
11	Efficient QoS-Driven Resource Allocation in Integrated CDMA/WLAN Networks - An Autonomic Architecture	G.Aristomenopoulos, T. Kastrinogiannis, S. Papavassiliou	1st International Conference on Mobile Lightweight Wireless Systems	To appear (June 2009)						
12	A Unified Approach for Efficient Network Selection in Multi-Service Integrated CDMA/WLAN Systems	G.Aristomenopoulos, T. Kastrinogiannis, S. Papavassiliou	5th International Wireless Communications and Mobile Computing Conference	To appear (June 2009)						
13	A Utility-based Power Allocation Non-cooperative Game for the Uplink in Multi-Service CDMA Wireless Networks	E.E.Tsiropoulou, T.Kastrinogiannis, S. Papavassiliou	5th International Wireless Communications and Mobile Computing Conference	To appear (June 2009)						
14	Realization of QoS Provisioning in Autonomic CDMA Networks under Common Utility-Based Framework	E.E.Tsiropoulou, T.Kastrinogiannis, S. Papavassiliou	Third IEEE WoWMoM Workshop on Autonomic and Opportunistic Communications	To appear (June 2009)	IEEE					
15	Requirements for a Generic Autonomic Network Architecture (GANA) suitable for Standardizable Autonomic Behaviour Specifications of Decision-Making Elements (DMEs) for Diverse Networking Environments	R. Chaparadza	Accepted by the International Engineering Consortium (IEC) for publication in the Annual Review of Communications vol 61	Dec 2008						

No	Title	Authors	Title of periodical	Date / No	Publisher	Place of publication	Year	Pages	Permanent identifier	Open access
16	Creating a viable Evolution Path towards Self-Managing Future Internet via a Standardizable Reference Model for Autonomic Network Engineering	R.Chaparadza, S.Papavassiliou, T.Kastrinogiannis, M.Vigoureux, E.Dotaro, A.Davy K.Quinn, M.Wodczak, A.Toth	Accepted for the FIA 2009 conference in Prague, to be published in the Future Internet book (The best Future Internet research ideas and achievements)	May 2009						
17	An approach to Measurement Based Quality of Service Control for Communications Networks	A Davy	IM2009 Dissertation Digest							
18	Autonomic Monitoring and Resource Management using P2P techniques		Extended abstract accepted by the TERENA conference 2009	June 2009						
19	Evolution of the current IPv6 towards IPv6++	R Chaparadza	IPv6 with Autonomic Flavours, International Engineering Consortium (IEC), Annual Review of Communications	vol 61 Dec 2008						
20	Probability-Based Information Dissemination in Urban Environments	Miklos Mate, Rolland Vida	Proc. 14th EUNICE Open European Summer School	September 2008		Brest, France				
21	Reliable gossiping in inter-vehicular communication	Miklos Mate, Rolland Vida	Infocommunications J.	vol LXIV 2009/1				pp17-22		
22	An enhanced factoring algorithm for reliability evaluation of wireless sensor networks	Y Xiao, S Chen, X Li, Y Li	9th Int. Conf. for Young Computer Scientists					pp2175-2179		

No	Title	Authors	Title of periodical	Date / No	Publisher	Place of publication	Year	Pages	Permanent identifier	Open access
23	Evaluate reliability of wireless sensor networks with OBDD	Y Xiao, X Li, Y Li, S Chen	Accepted by Proc. 2009 IEEE Int. Conf. on Communications							
24	The Adaptive Loopback Mechanism for LSP Failure Detection	Y Xiao, S Chen, X Li, Y Li	Accepted by J. Beijing University Posts and Telecommunications							
25	A route flap suppression mechanism based on dynamic timers in OSPF network	F Wang, S Chen, X Li, Y Li	The 9th Int Conf. for Young Computer Scientists				2008			
26	Defensive configuration with Game Theory	S. Becker, R State, T. Engel	Accepted IEEE/IFIP Int. Symp. on Integrated Network Management	June 2009		New York, USA				
27	Using Game Theory to configure P2P SIP	S. Becker, R State, T. Engel	Accepted IPTComm 2009: Principles, Systems and Applications of IP Telecommunications	July 2009		Georgia, USA				
	An autonomic interface selection method for multi-interfaces mobile terminal in heterogeneous wireless environments	F Wang, S Chen, X Li, Y Li	Accepted by CSIE 2009 (31 Mar - 2 Apr 09)							
	Mobility in Wireless Sensor Networks	Rolland Vida, Attila Vidacs	To appear: Book Chapter in "RFID and Sensor Networks"		Auerbach Publications CRC Press					
	Routing and Information Spreading in ITS Networks	P Laborczi, A Torok, M Mate, R Vida	To appear: Book Chapter in "Wireless Technologies for Intelligent Transportation Systems"		Nova Science					

No	Title	Authors	Title of periodical	Date / No	Publisher	Place of publication	Year	Pages	Permanent identifier	Open access
	Monitoring within an Autonomic Network: A GANA based Network Monitoring Framework	R Chaparadza	Submitted to the JSAC Communications Journal							
	IPv6-based platform for fault management, auto-configuration, resilience and survivability in autonomic network engineering	M Fecko	Submitted to ICT Mobile Summit 2009, Santander							
	Demystifying Self-awareness of Autonomic Systems	M Smirnov	Submitted to ICT Mobile Summit 2009, Santander							
	Towards a Testbed Instatiation of GANA: Realising Autonomic Site Multohoming	A Davy	Submitted to Tridentcom							

4. List of dissemination activities

Date	Event /topic	Details	Partners
21-23 Jan 08	EFIPSANS kick-off meeting, UL	Participation of Charlie Perkins (Nokia US) and John Strassner (Chair of the ACF forum)	All
2 Feb 08	MIT OLPC project, Boston	Participation by Latif Ladid	UL
7-8 Feb 08	SSC Kick-off meeting, Berlin	Internal dissemination and discussion	SSC members
15-17 Feb 08	WP4 Kick-off meeting	Internal dissemination and discussion	WP4 participants
21-22 Feb 08	WP1 Kick-off meeting	Internal dissemination and discussion	WP1 participants
24 Feb 08	Internet Society Israel IPv6 conference	Keynote speech by Latif Ladid	UL
10-12 Mar 08	Future Internet Concertation Meeting, Brussels	Alignment of FI projects	EAB, Fokus
14 Mar 08	Gulf IPv6 Summit, Abu Dhabi	Keynote speech by Latif Ladid	UL
30 Mar - 2 Apr 08	FIA meeting in Bled	Future Networks F7 conference	EAB, Fokus
2 Apr 08	WP3 Kick-off meeting, Athens	Internal dissemination and discussion	WP3 participants
4 Apr 08	BME meeting, Budapest	Finalising participation of BME - internal dissemination	EAB, BME
10-11 Apr 08	WP2 Kick-off meeting, Warsaw	Internal dissemination and discussion	WP2 participants
12 Apr 08	Beijing IPv6 summit	Speech at BUPT	BUPT, UL

Date	Event /topic	Details	Partners
30 Apr 08	Future Internet Bled Conference	Participation by Andras Toth, Latif Ladid, Thomas Engel, Ranganai Chaparadza	EAB, UL, Fokus
5-9 May 08	WP1 Workshop, Berlin	Workshop on meta-modelling and modelling	WP1 participants
6 May 08	Berlin IPv6 summit	Keynote speech by Latif Ladid	UL
8 May 08	Berlin IPv6 summit	IPv6 and autonomic networking presentation by Ranganai Chaparadza	Fokus
19 May 08	Manila IPv6 summit	Keynote speech by Latif Ladid	UL
27 May 08	EFIPSANS General Assembly	Plenary meeting in Stockholm	All
30 May 08	European IPv6 day	Representation by Andras Toth, Latif Ladid, Ranganai Chaparadza, Kevin Quinn, ML, VK	EAB, UL, Fokus, TSSG , Velti, Fujitsu
11 Jun 08	Conference: IP Network Transformation Forum 2008	Attended by Kevin Quinn to disseminate EFIPSANS	TSSG
11-12 Jun 08	Future Internet Cluster Meeting	Coordination with other EU projects	EAB, Fokus
16 Jun 08	Euro-Korea Cooperation Conference, Seoul	Attended by Latif Ladid	UL
17 Jun 08	OECD Ministerial Meeting, Seoul	Attended by Latif Ladid	UL
18 Jun 08	Seoul IPv6 summit	Attended by Latif Ladid	UL
10-11 Jul 08	Workshop, Salzburg	1st European Workshop on Mechanisms for the Future Internet (MOMENT). Paper presented	GRNET
26 Jul 08	WP4 meeting	Dublin	WP4 participants
27 Jul-1 Aug 2008	72nd IETF , Dublin	Contribution to Internet draft	ALF, TSSG, GRNET

Date	Event /topic	Details	Partners
9-12 Sep 08	Conference, Nice		ICCS
17-19 Sep 08	WP1 meeting	Athens. Internal dissemination and discussion	WP1 participants
30 Sep - 2 Oct 08	EC concertation meeting, Brussels	Workshop on Self-Management related FP7 projects	Fokus, EAB, TARC-PL, TSSG, ICCS, ALF
15-17 Oct 08	Project Plenary Meeting, Paris	Internal dissemination and discussion	All
28 Oct 08	Cascadas Project Demo, London	Project interaction	TSSG
17-19 Nov 08	Australian IPv6 summit	Andras Toth invited speaker	EAB
25-27 Nov 08	ICT conference, Lyon	Project dissemination	EAB
3-4 Dec 08	WP2 Workshop, Berlin	Internal dissemination and discussion	WP2 participants
10-12 Dec 08	Future Internet Assembly meeting, Madrid	Discussion and planning platform	Fokus, TSSG

5. Further plans

The plans for the exploitation and dissemination activities during the remainder of the project are summarised below.

5.1 Public website

The website will be updated at least once per month to ensure that returning visitors have new features to see and to keep the content current. Particular emphasis will be given to:

- Publicising the public versions of deliverables and making them available
- Highlighting results from the project for example demonstrations and the socio-economic research. As an example the presentations from Beijing are available as individual files and will be made available for download as an information resource
- Promoting links with other projects and initiatives, especially the ETSI ISG.

5.2 Dissemination

The project aims to maintain the same high level of engagement with the various stakeholders with a target of at least 20 external dissemination events per year.

To allow the involvement of the interested parties with less expertise in the area, and even the general public, a video presentation is planned which will demonstrate the value of the work within the EFIPSANS project and the positive impact which the resulting technology will have on everyday life.

5.3 Publications

As the project proceeds, so the number of publications will grow, with the majority of publications being submitted in the last 6 months of the project. The aim of the project is to demonstrate 70 peer-reviewed papers, conference contributions or book chapters by the end of the project.

At least five publications will be submitted to trade magazines or other more general publications in order to make information on the project accessible more widely.

5.4 Exploitation

Future versions of this report will contain a table summarising the overview of exploitable foreground IP giving details of the application and timetable for exploitation as the opportunities

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become clearer during the second year of the project. So far, no opportunities have so far been identified requiring formal protection of the foreground IP from the project.