

平成 25 年度日欧共同公募委託研究第 2 回中間レビュー評価結果（概要）

課題番号 167

課題名：新世代ネットワークの実現に向けた欧州との連携による共同研究開発（研究期間 平成 25 年度～平成 27 年度）

評価ランク：

- S Excellent progress** (the project has fully achieved its objectives and technical goals for the period and has even exceeded expectations).
- A Good progress** (the project has achieved most of its objectives and technical goals for the period with relatively minor deviations).
- B Acceptable progress** (the project has achieved some of its objectives; however, corrective action will be required).
- C Unsatisfactory progress** (the project has failed to achieve key objectives and/or is not at all on schedule).

課題	研究課題名	受託者（共同研究者）	評価
ア	モノのネットワークとクラウドを融合するネットワークサービス基盤の研究開発 副題：スマートシティにおける市民の影響力を拡張する Cloud of Things 基盤技術 [ClouT]	東日本電信電話株式会社 （慶應義塾大学 SFC 研究所・徳田英幸教授、国立情報学研究所、日本電信電話株式会社、パナソニックシステムネットワークス株式会社） （Commissariat à l'énergie atomique et aux énergies alternatives (仏), Engineering Ingegneria Informatica SpA (伊), University of Cantabria (西), STMicroelectronics S.r.l. (伊), Santander City Municipality (西), Genova Municipality (伊)）	A
主な評価コメント	<p>As an overall assessment, the project is making a very good progress for the 2nd year with respect to the objectives and plan. The JP and EU consortia are working well together in co-developing innovative technologies. The architecture has been finalized, updated versions of the system services have been made available and software modules have been developed. Specific field trials covering three different categories of smart city objectives have been compiled as well as integrated prototypes. It is an innovative project extending the state of the art and a well-motivated consortium. The demos of the FUJISAWA city application scenario were impressive and demonstrated the full capabilities of the ClouT system in developing Cloud+IoT based applications. The synergies of both Cloud and IoT combined technologies, through the integrated ClouT prototypes '<i>City infrastructure as a service</i>' (<i>CIaaS</i>) and '<i>City platform as a service</i>' (<i>Cpaas</i>), were presented for all 4 application scenarios involving smart cities: Fujisawa, Mitaka, Genova and Santander. A lot of dissemination activities have been performed (e.g. attendance to events, booths, organization of workshops, press releases, etc). Furthermore, project management is very good, and collaboration between partners is apparent and good. Exploitation needs additional work on market positioning and business plans. For the next year, the project needs to pay attention to the overall ClouT system integration. Prototypes should demonstrate the need of ClouT technology and as well the need of the integration of Cloud + IoT technologies. A number of recommendations were given to the project and these will be implemented before the final review next year.</p>		

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イ	ネットワークテストベッドを活用した日欧における実証的共同研究 副題：大規模情報通信基盤実証実験のための連携テストベッド[FELIX]	産業技術総合研究所 (KDDI株式会社) (Instytut Chemii Bioorganicznej Pan(Poland), Nextworks(伊), Fundacio Privada I2CAT, Internet I Innovacio Digital a CATALUNYA(西), SURFnet bv(蘭), European Center for Informantion and Communication(独), IMINDS VZW(白))	A
主な評価コメント	<p>The second year of the FELIX project was mainly focused on the design and implementation of the FELIX federation framework, following the overall architecture and the six experimental use cases produced during the first year. Following the description of the architecture released one year ago, a more detailed one was produced and permits to base the implementation done during the last months on solid foundation. The released deliverables from work package 3 "Implementation" and a complementary White Paper bridged a part of the gaps that had been identified at the end of the first year. However, in some aspects, uncertainty still subsists.</p> <p>The approach followed during the implementation work has been to reutilize and, if necessary, enhance, existing tools rather than developing new components from scratch. Thus components and functionalities, such as resource provisioning, monitoring, inter-testbed connectivity and user GUI, reutilized existing tools from previous R&D projects, like Fed4FIRE, or activities, like OGF NSI. In this respect, the identification of the specific FELIX contributions could have been more substantiated in the related reports.</p> <p>During this second year, slight delays in some tasks execution and reports delivery have been noticed but all of them have been justified.</p> <p>The FELIX project has made considerable progress regarding testbed deployment. In particular, inter-connectivity among FELIX islands in Japan and European countries has been provided. A series of FELIX software components have also been hosted by the FELIX islands. These software components were used during the deployment of the FELIX testbed followed by its initial testing and validation using the six selected use cases.</p> <p>The reviewers concluded that the project activities seem to progress smoothly and appreciate the released of additional reports, not initially foreseen, and complementing the official deliverables.</p> <p>On another hand, some points of attention for the future work were highlighted, like the need to position FELIX in the overall testbed federation landscape, the contribution to standardisation activities, the participation of external experimenters and scientific publications.</p> <p>Last but not least, as after the first project review, the reviewers appreciated the very good collaboration between Japanese and European members of the project.</p>		

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ウ	コンテンツ指向ネットワーキングによる省エネルギーコンテンツ配信の研究開発 副題：グリーンコンテンツ指向ネットワーキング (GreenICN) と応用 [GreenICN]	KDDI 研究所 （日本電気株式会社、パナソニックアドバンスドテクノロジー株式会社、東京大学・浅見徹教授、早稲田大学・中里秀則教授、大阪大学・長谷川亨教授） （Georg-August-Universität Göttingen(独)， NEC Europe(英)， CEDEO(伊)， Telekomunikacja Polska – Orange Labs Poland(Poland)， University College London(英)， Consorzio Nazionale Interuniversitario per le Telecomunicazioni(伊)）	A
主な評価コメント	<p>During the second year, the project developed further the GreenICN architecture and the implementation of prototypes. In addition, the project has also carried out studies on mechanisms and solutions (e.g. rate control, caching, forwarding, security, etc.) that are meant to improve the efficiency of ICN communications in general and particularly in disaster scenarios.</p> <p>The new results of the second year include (1) an updated “big picture” of the whole solution, (2) an assessment of energy reduction due to caching, (3) a new object resolution system design (ORICE – Object Resolution services in Information-Centric Environment), (4) development of a monolithic middleware for resource constrained devices, (5) in-network resource pooling, (6) security mechanisms, (7) a publish and subscribe system with content delivery network (CDN) integration (COPSS – Content Oriented Publish/Subscribe System), (8) a location-independent routing layer (LIRA) for CDNs in ICN, (9) service chaining as a new use case, and (10) mobile to mobile live video streaming as another new use case.</p> <p>During the second period the project has particularly consolidated the work on prototype realization by producing a version of the MPEG middleware for Android phones and by developing three prototypes that illustrate the feasibility of the GreenICN approach for video transmission.</p> <p>Overall, the project research results produced during its second year are sound and obtained very good visibility in scientific and standardization forums. 25 articles were published, or accepted for publication, in scientific conferences and journals during the second year. In particular "Exploiting ICN for Flexible Management of Software-Defined Networks" was awarded the Best Paper Award at the 1st ACM Conference on Information-centric Networking (ICN-2014).</p> <p>The standardization activity of GreenICN was very active and successful. The project made contributions at the IETF CDN Interconnection working group; the IRTF ICN research group; the ISO/IEC MPEG working group, and the ITU-T Focus Group on Disaster Relief Systems and Network Resilience and Recovery. The standardization activity of GreenICN has resulted in 22 IETF and 6 MPEG contributions.</p> <p>Throughout its second year the project has clearly ensured a very good progress towards achieving the planned final objectives, and its success is also the result of a strong collaboration between the various researchers working in different research organizations in Japan and Europe.</p> <p>More information is available at the project website: http://www.greenicn.org</p>		