



CELTIC-NEXT Proposers Day

5th February 2019, London



Pitch of the Project Proposal

TIPS: Trust, Isolation and ProofS

Chrystel Gaber
chrystel.gaber@orange.com

Teaser



- Outcome
 - Abstract model of isolation solution
 - 1st European **open source & formally proven minimal kernel**
<https://github.com/2xs/pipcore>
 - Architecture consolidated by the use of **tokens**
 - Systems security evaluation methodology **Lego methodology**
- Impacts
 - Enhanced products & offers for several partners
 - Pip user club
 - 1st European workshop (academic) on proven OS
<https://entropy2018.sciencesconf.org/>

Proposal Introduction (1)

- Vision: Deliver **secure** environments of services for **M2M, IOT, real-time** systems and reach **high security levels**
- Problems
 - **Security by design & evaluation of system** with heterogeneous and multi-level security components require **time & expertise**
 - Chain of **responsibilities** (& liabilities) are not clear
 - Security solutions need to be tailored for **constrained objects**
 - **Proofs** are delicate in terms of security & safety
- Solutions
 - Provide **secure building blocks & models** by generalising the approaches defined in ODSI
 - Provide **tools for lego methodology** systems security evaluation

Proposal Introduction (2)



CELTIC-NEXT
Next Generation Telecommunications

OS & formal proof

Multicore processors

Extend ODSI approach
beyond memory
isolation

New hardware model

Automated code
generation from proof

System Security evaluation

Lego methodology
pilot

Tool specifications

Security architecture

Security model for
automated exchanges
between objects

Functional tokens &
kernel/hardware rights

Industriali- zation

Linux over
Pip

Pip over
Arm

Automated security
evaluation tool

Frameworks

Proposal Introduction (3)



- Expected outcome
 - **Secure-by-design building blocks** to achieve a good level of security even without certification
 - Lego **Security Evaluation** Methodology & **tools** to evaluate complex industrial systems in the context of a well-defined Use Case
- Impacts
 - **E-health, smart cities, Industry 4.0,...** : Achieve a good level of security in a cost/effort/time-effective way
- Schedule (ideally)
 - Consortium definition: End February
 - Full project proposal: End March (submission 8th April)
 - Project Starts : ~October 2019

Partners

- *Existing Consortium:*
 - *Orange (France) → management & use case*
 - *Internet Of Trust (France) → security evaluation*
 - *University of Lille (France) → OS & formal proof*

WE NEED YOU !



- *IOT / real-time uses cases / applications which require security (e.g. isolation, formal methods, tokens,...)*
- *OS/hardware development*
- *Develop software solution to industrialize lego methodology*
- *Frameworks for secure communications, authorizations & management*

Contact Info



For more information and for interest to participate please contact:

Chrystel Gaber, Orange Labs
chrystel.gaber@orange.com

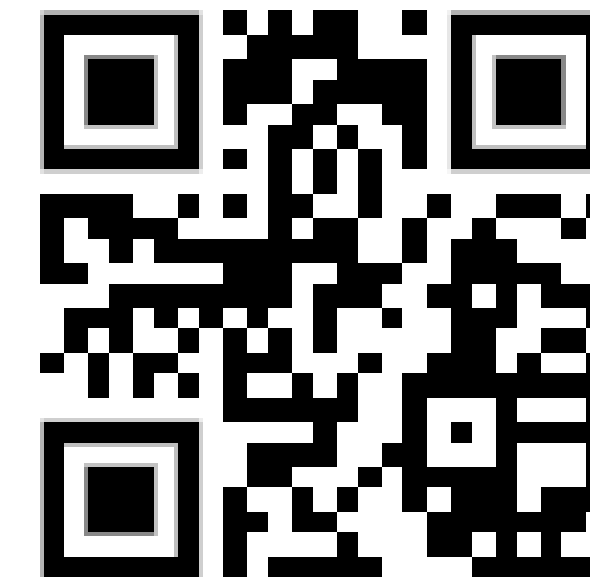
Postal address

Orange Labs Caen
42 rue des Coutures
CS 56243, 14066 Caen Cedex 4
France



Presentation available via:

www.tiny.cc/proposaltidea



Join the follow-up Telco

12 Feb. 13.00 CET

[Join Webex meeting](#)

Meeting number (access code): **955 051 911**

Meeting password: **DgAmXwAJ**

Join by phone

[+49-6925511-4400](#) Germany toll

[Global call-in numbers](#)

[Can't join the meeting?](#)

