



From Real-world Identities to Privacy-preserving and Attribute-based
CREDentials for Device-centric Access Control















WP8– Exploitation and Dissemination
Deliverable D8.4 “Second dissemination report”

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ReCRED Project Profile

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Partners

 University of Piraeus	University of Piraeus research center	Greece
 Telefónica Investigación y Desarrollo	Telefonica Investigacion Y Desarrollo Sa	Spain
	Verizon Nederland B.V.	The Netherlands
	certSign SA	Romania
	Wedia Limited	Greece
	EXUS Software Ltd	U.K.
 Bringing business and IT together	Upcom Bvba	Belgium
	De Productizers B.V.	The Netherlands
	Cyprus University of Technology	Cyprus
	Universidad Carlos III de Madrid	Spain
	Consorzio Nazionale Interuniversitario per le Telecomunicazioni	Italy
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Executive Summary

The ReCRED consortium, recognizing the importance of the dissemination activities, employs various channels to promote project’s goals and advantages. To this end the project establishes its presence by the website and the social media accounts in Facebook, Twitter, LinkedIn and Youtube. Statistics indicate an increase of the traffic the last year but we are aiming at higher numbers especially at this moment where the four pilots are being deployed.

The promotion of the project is also done through material such as the newly re-designed leaflet and poster and the modern project’s video. Towards the dissemination of the project to the general public, the consortium is producing whitepapers and newsletters. The first whitepaper and newsletter have been published and there is a specific plan for the next ones. ReCRED has a presence in the media, mostly at a local level, but we are aiming to have more media coverage in the next year where the project’s pilots will reach real users.

In the academic area the consortium has managed to produce a good number of papers in prestigious conferences and journals and present the project and its goals through talks at universities and presence at various events that both industry and academia people attend.

Apart from the project’s presence at industrial events such as the Mobile World Congress, a major achievement for the project at the industry level is the FIDO UAF certification of the gateSafe module by certSign.

Last, the consortium has been in contact with two other European projects, TYPES and IRMA, exploring the possibility of knowledge transfer and collaboration.

While overall the dissemination activities are at a good level, the ReCRED consortium is making efforts to maintain and increase project’s popularity through all possible ways.

This document presents all the dissemination activities that happened at the second year of the project.

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1 Introduction

Dissemination is an important part of project success. Project’s goals and objectives as well as implementation progress, scientific research and important technological advantages have to be communicated to security experts, researches and to the general public. To this end ReCRED consortium is using various means and channels.

The base of the project’s communication activities is the website and the social media accounts. Through them all the news about the project are communicated to the general public. Facebook, Twitter and LinkedIn along with YouTube, to host project’s videos and demonstrations are the four social media platforms that we have employed.

Project video, poster and leaflet are also the means to reach a wide range of audience in a clear and quick way. In one minute, watching the video or reading the leaflet, anyone can get an idea about project’s goals and advantages. Presentations in security related events, talks to universities and presence in local media promotes project’s objectives and importance to the general public.

Project goals and progress are also demonstrated through our newsletter that is sent to a number of selected contacts that are into the field of IT, security either in academia or in the industry. To this more specific audience of experts we address also our whitepapers.

Our academic partners demonstrate also the research around ReCRED and its technologies to the academia through publications and presentations in conferences and workshops while, at an industry perspective, good steps have been made towards certification with gateSafe UAF module been certified by the FIDO alliance.

In this report we describe all the dissemination activities that took place in the second year of the projects at all the above mentioned channels. This information is also available through the news section of our project’s website.

2 Project website for the ReCRED project & applications.

The project’s website, developed and hosted by WEDIA, is live since the first months of the project with rich content presented in a simple and modern structure. Its structure and its design principles have been discussed in deliverable D8.2 and updates are discussed in deliverable D8.3. The project’s website is constantly updated with new content – mainly project news and information related to the dissemination and implementation activities – while some modifications are implemented from time to time to improve the UI.

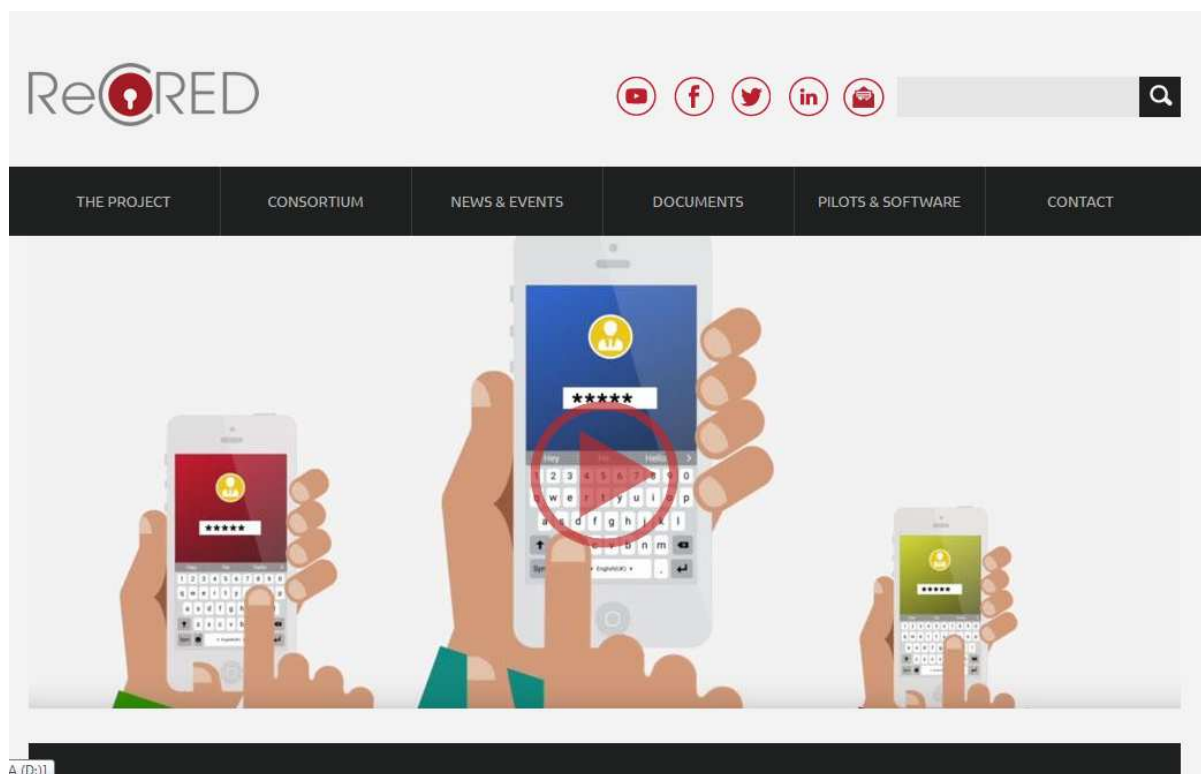


Figure 1 The ReCRED website welcome page

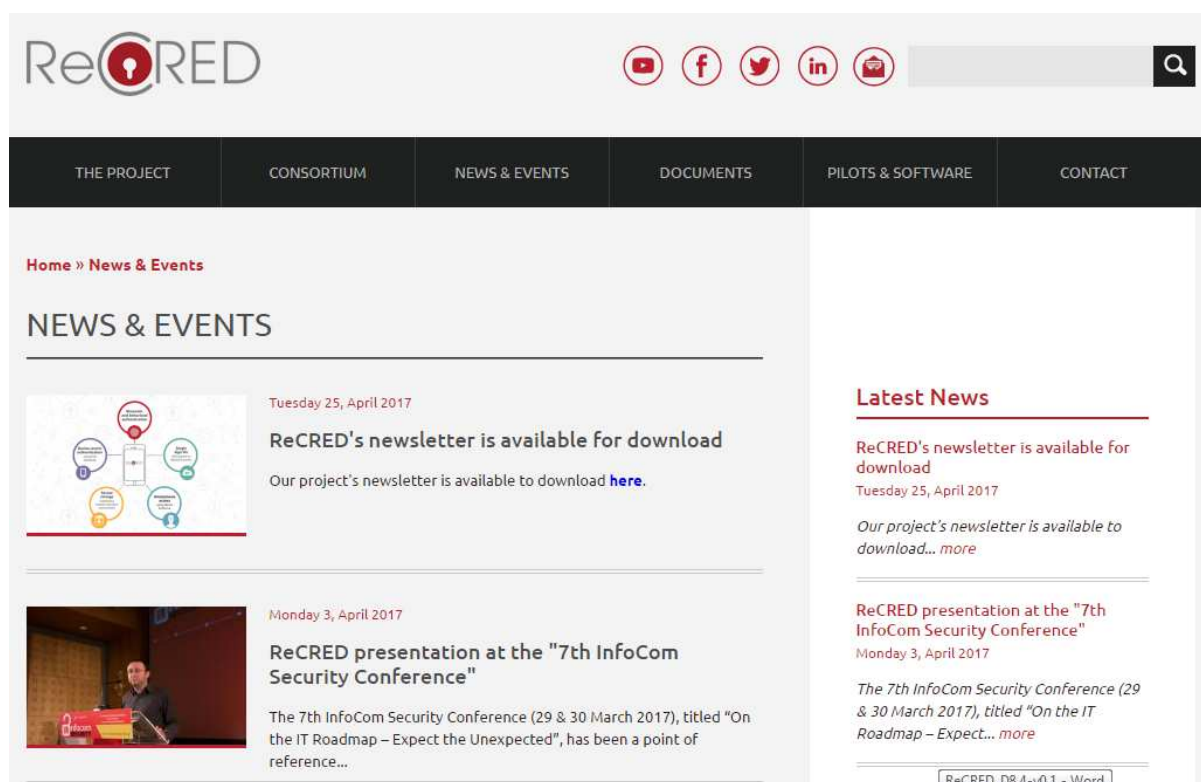


Figure 2 The news and events page of the website

A dedicated page that hosts information about the open source software components is now available online.

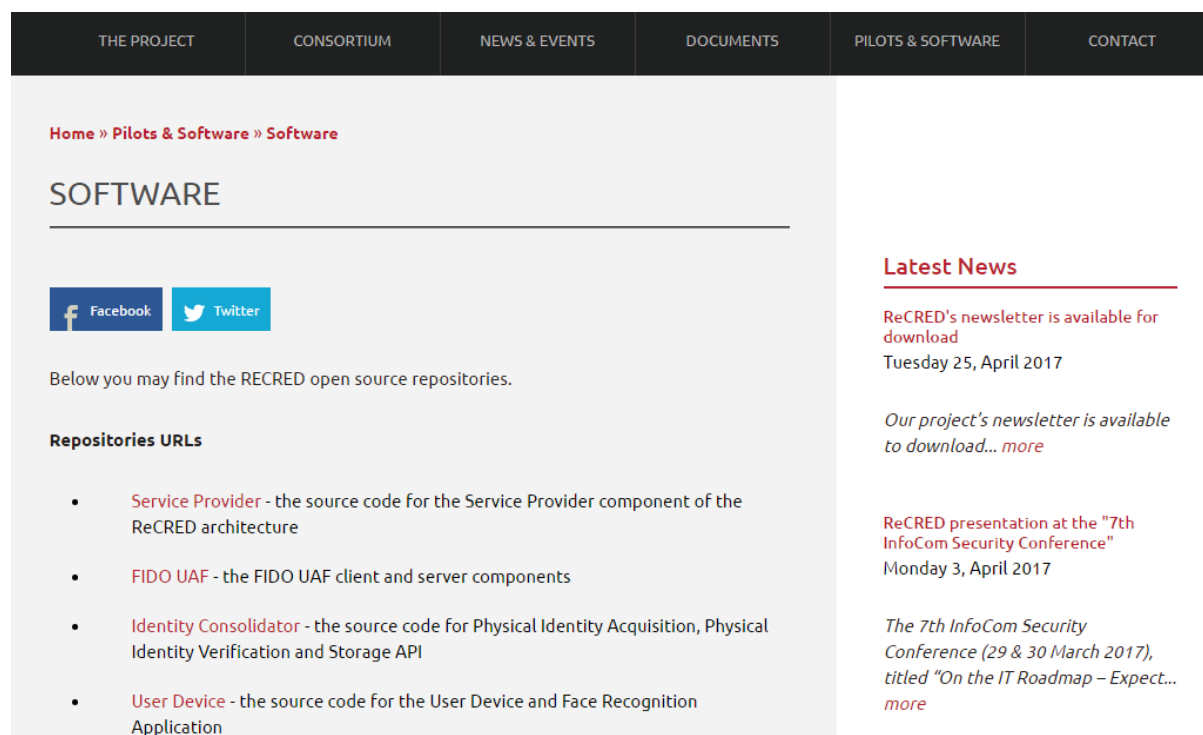


Figure 3 The open source software page of the website

The website is gaining more and more visitors and this is reflected by the analytics shown in the following figures.

Period 1/1/2017/1/1 to 28/04/28

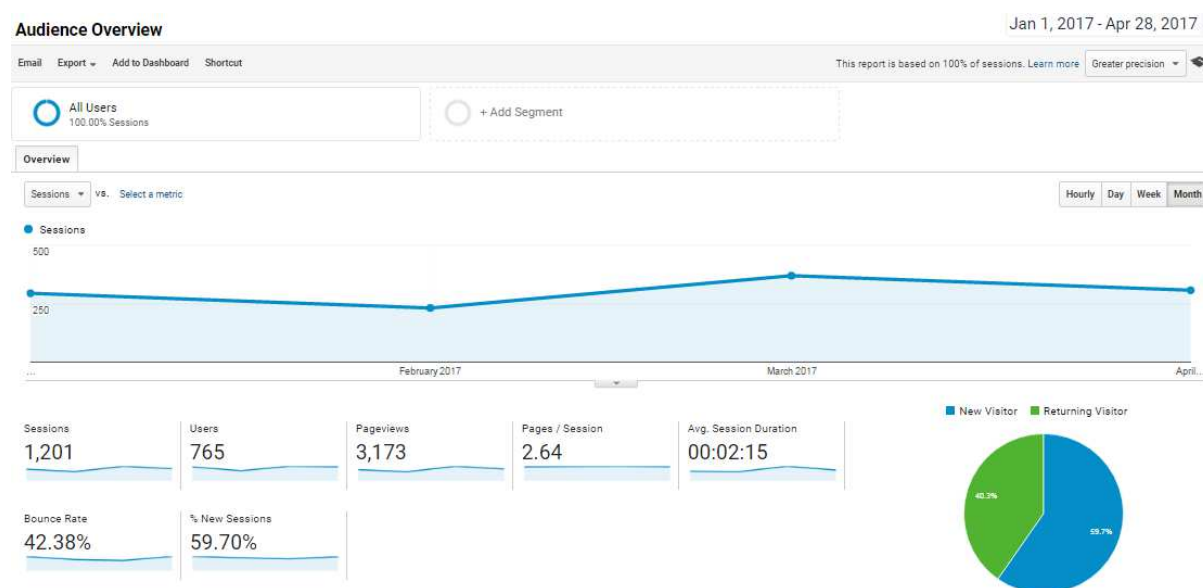


Figure 4 Audience overview of the ReCRED website for the period 1/1/207 to 28/4/2017

As it is shown in the above figure, the website had 1201 sessions and 765 users during the first four months of 2017. In the following figure, the sessions per country are shown.

Country ?	Acquisition			Behavior		
	Sessions ? ↓	% New Sessions ?	New Users ?	Bounce Rate ?	Pages / Session ?	Avg. Session Duration ?
	1,182 % of Total: 98.42% (1,201)	59.05% Avg for View: 59.70% (-1.09%)	698 % of Total: 97.35% (717)	41.46% Avg for View: 42.38% (-2.19%)	2.67 Avg for View: 2.64 (1.00%)	00:02:17 Avg for View: 00:02:15 (1.61%)
1. Greece	508 (42.98%)	48.43%	246 (35.24%)	36.42%	2.83	00:03:01
2. United States	113 (9.56%)	96.46%	109 (15.62%)	81.42%	1.35	00:00:31
3. Romania	79 (6.68%)	44.30%	35 (5.01%)	31.65%	2.47	00:01:29
4. Spain	76 (6.43%)	53.95%	41 (5.87%)	36.84%	3.61	00:02:00
5. Cyprus	65 (5.50%)	49.23%	32 (4.58%)	36.92%	3.71	00:02:14
6. United Kingdom	58 (4.91%)	44.83%	26 (3.72%)	17.24%	2.76	00:02:00
7. Italy	52 (4.40%)	63.46%	38 (4.73%)	42.31%	2.35	00:01:39
8. Netherlands	42 (3.55%)	50.00%	21 (3.01%)	28.57%	2.93	00:02:54
9. Belgium	30 (2.54%)	53.33%	16 (2.29%)	30.00%	3.70	00:05:07
10. Germany	18 (1.52%)	88.89%	16 (2.29%)	66.67%	1.83	00:00:47

Period 2016/05/01 – 2017/04/28

During the last year of the project, 4,422 sessions have been engaged by a total of 2685 users resulting at a total of 10,853 pageviews (Figure 5).

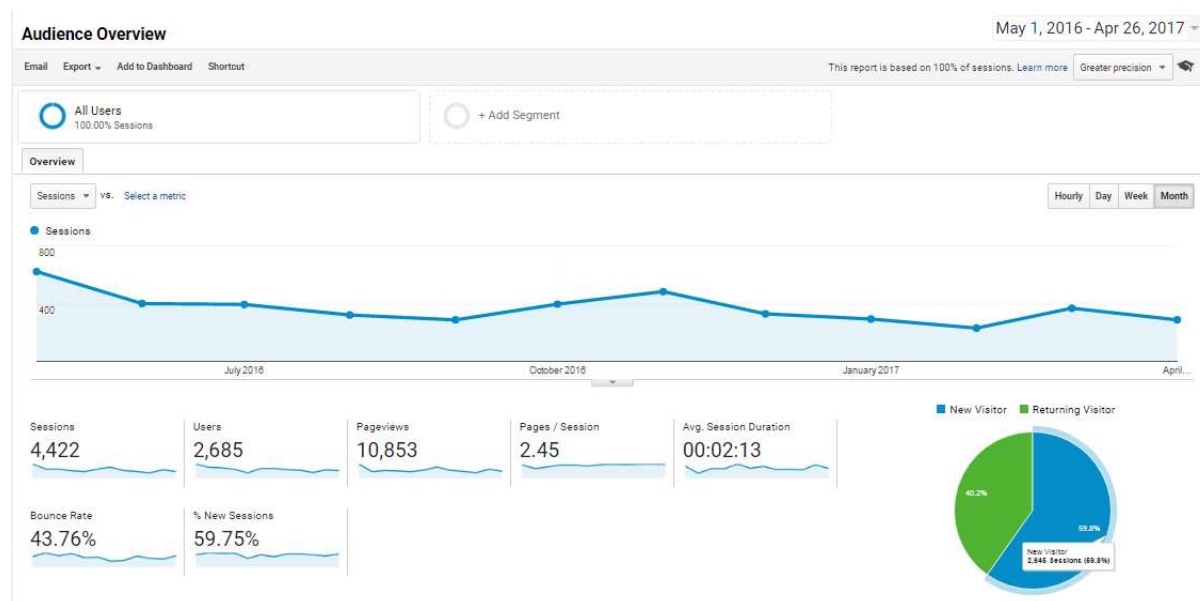


Figure 5 Audience Overview for the last year of the project.

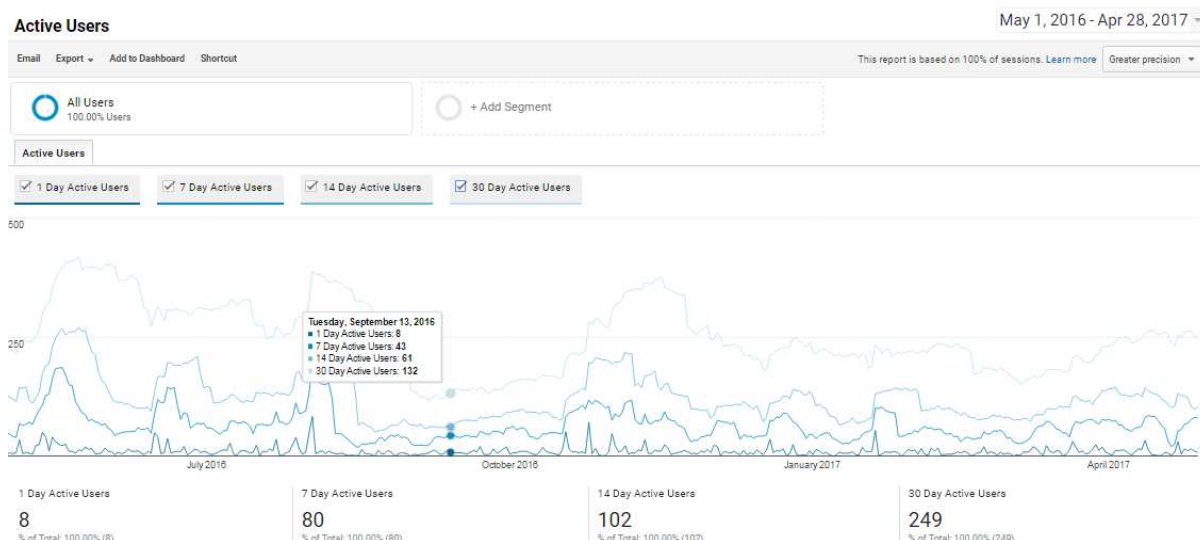


Figure 6 The active users report of google analytics

An average of 10 users per day are currently the main traffic of ReCRED’s website.

Country	Acquisition			Behavior		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration
	4,323 (% of Total: 97.34% (4,441))	58.80% Avg for View: 59.74% (-1.57%)	2,542 (% of Total: 95.82% (2,653))	42.31% Avg for View: 43.75% (-3.30%)	2.49 Avg for View: 2.45 (1.57%)	00:02:17 Avg for View: 00:02:13 (2.72%)
1. Greece	1,642 (37.98%)	46.77%	768 (30.21%)	39.10%	2.79	00:03:01
2. United Kingdom	337 (7.80%)	76.85%	259 (10.19%)	65.88%	1.84	00:01:03
3. Cyprus	323 (7.47%)	45.51%	147 (5.78%)	36.53%	2.56	00:02:41
4. United States	301 (6.96%)	92.69%	279 (10.98%)	53.16%	1.88	00:00:34
5. Romania	276 (6.38%)	48.55%	134 (5.27%)	34.78%	2.68	00:02:01
6. Spain	239 (5.53%)	71.13%	170 (6.69%)	51.88%	2.43	00:01:11
7. Italy	197 (4.56%)	63.96%	126 (4.96%)	32.49%	2.87	00:01:33
8. Russia	152 (3.52%)	8.55%	13 (0.51%)	11.84%	1.93	00:05:03
9. Belgium	149 (3.45%)	42.95%	64 (2.52%)	34.23%	3.11	00:04:02
10. Netherlands	123 (2.85%)	57.72%	71 (2.79%)	37.40%	2.83	00:02:57

Figure 7 Visiting sessions information by country for the last year of the project

User Type	Acquisition			Behavior		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration
	4,441 (% of Total: 100.00% (4,441))	59.81% Avg for View: 59.74% (0.11%)	2,656 (% of Total: 100.11% (2,653))	43.75% Avg for View: 43.75% (0.00%)	2.45 Avg for View: 2.45 (0.00%)	00:02:13 Avg for View: 00:02:13 (0.00%)
1. New Visitor	2,656 (59.81%)	100.00%	2,656 (100.00%)	48.98%	2.34	00:01:25
2. Returning Visitor	1,785 (40.19%)	0.00%	0 (0.00%)	35.97%	2.62	00:03:25

Figure 8 New and returning website visitors. New visitors are the 59.81 per cent if the total sessions.

Device Category	Acquisition			Behavior		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration
	4,441 % of Total: 100.00% (4,441)	59.81% Avg for View: 59.74% (0.11%)	2,656 % of Total: 100.11% (2,653)	43.75% Avg for View: 43.75% (0.00%)	2.45 Avg for View: 2.45 (0.00%)	00:02:13 Avg for View: 00:02:13 (0.00%)
1. desktop	3,797 (85.50%)	58.60%	2,225 (83.77%)	44.80%	2.57	00:02:21
2. mobile	598 (13.47%)	64.72%	387 (14.57%)	38.29%	1.71	00:01:31
3. tablet	46 (1.04%)	95.65%	44 (1.66%)	28.26%	2.78	00:01:07

Figure 9 Generated traffic by desktop, mobile and tablet.

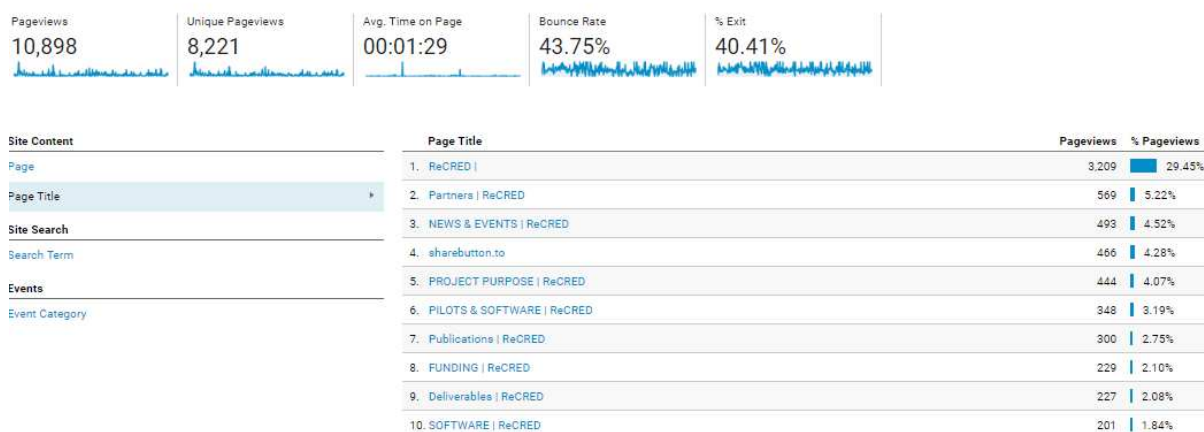


Figure 10 Pageviews per page title

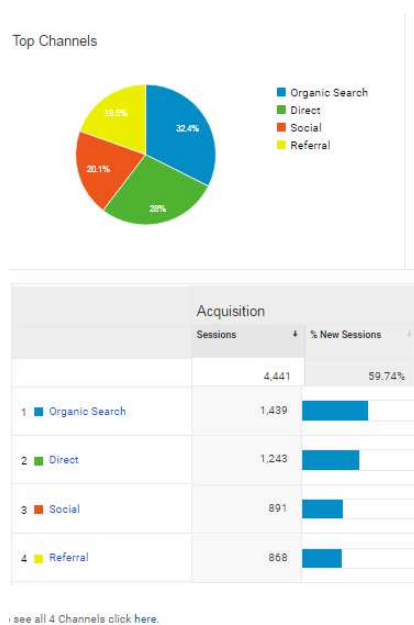


Figure 11 Traffic per channel

	Social Network	Acquisition			Behavior		
		Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration
		891 % of Total: 20.06% (4,441)	45.34% Avg for View: 59.74% (-24.10%)	404 % of Total: 15.23% (2,653)	37.71% Avg for View: 43.75% (-13.81%)	1.89 Avg for View: 2.45 (-22.80%)	00:02:04 Avg for View: 00:02:13 (-7.23%)
1.	Facebook	755 (84.74%)	50.46%	381 (94.31%)	38.81%	1.88	00:01:53
2.	Twitter	92 (10.33%)	19.57%	18 (4.46%)	44.57%	1.88	00:02:20
3.	reddit	32 (3.59%)	3.12%	1 (0.25%)	0.00%	2.00	00:05:23
4.	LinkedIn	5 (0.56%)	40.00%	2 (0.50%)	20.00%	2.60	00:00:34
5.	Stack Exchange	5 (0.56%)	0.00%	0 (0.00%)	0.00%	2.00	00:05:17
6.	Meetup	1 (0.11%)	100.00%	1 (0.25%)	100.00%	1.00	00:00:00
7.	ResearchGate	1 (0.11%)	100.00%	1 (0.25%)	0.00%	5.00	00:00:42

Figure 12 Traffic per channel

The project's website is being promoted by all partners as the point of reference of the project.

The website can be found under www.recred.eu.

3 ReCRED in social media

ReCRED has a presence in the most popular social media platforms. Posts about the news of the project, such as publications, conferences, talks, media coverage, plenary meetings, implementation issues as well as articles related to security and biometrics are posted regularly on Facebook, Twitter and linkedin accounts of the project.

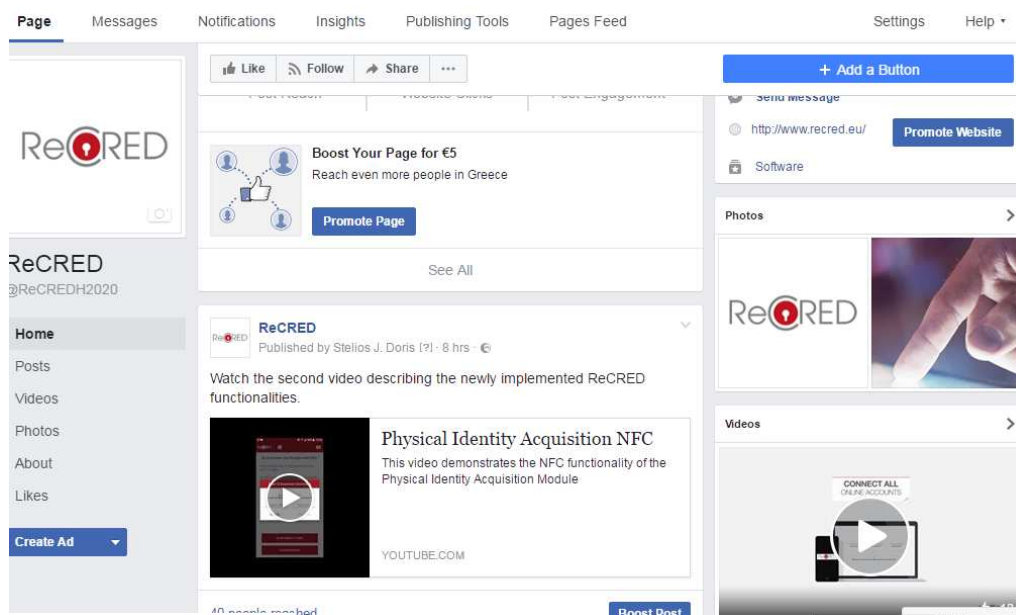


Figure 13 Project's Facebook page

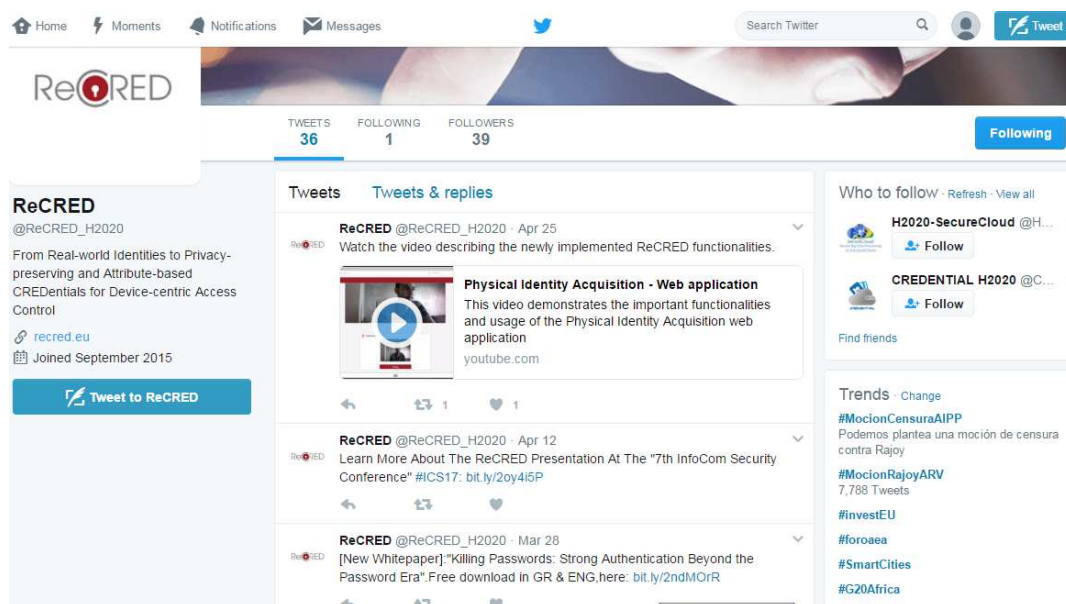


Figure 14 Project's Twitter page

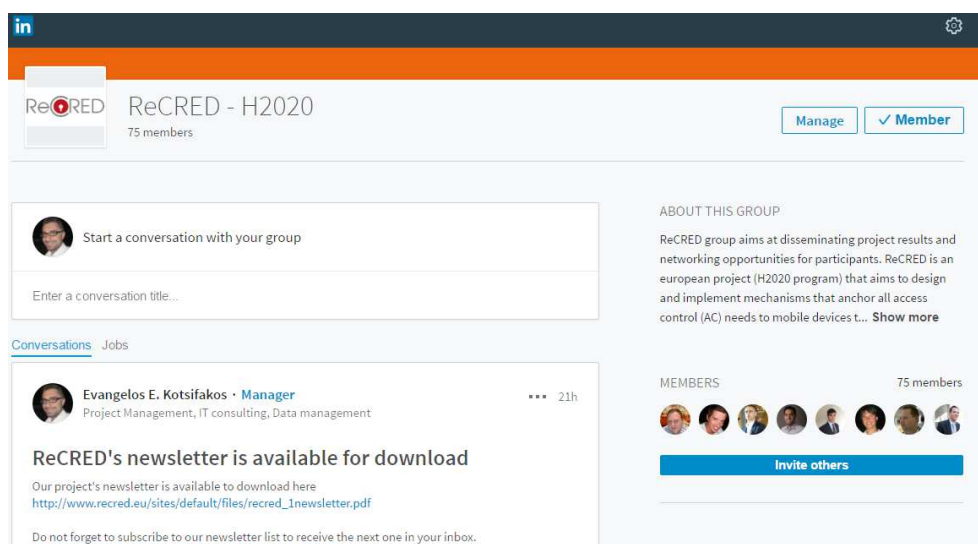


Figure 15 Project's LinkedIn page

Furthermore, project's YouTube channel is updated with demonstrators of the developed tools as well as talks and interviews of the involved partners on local television. Demonstrator videos are related to pilots and the related applications and to specific modules developed in the project like the physical identity acquisition web application.

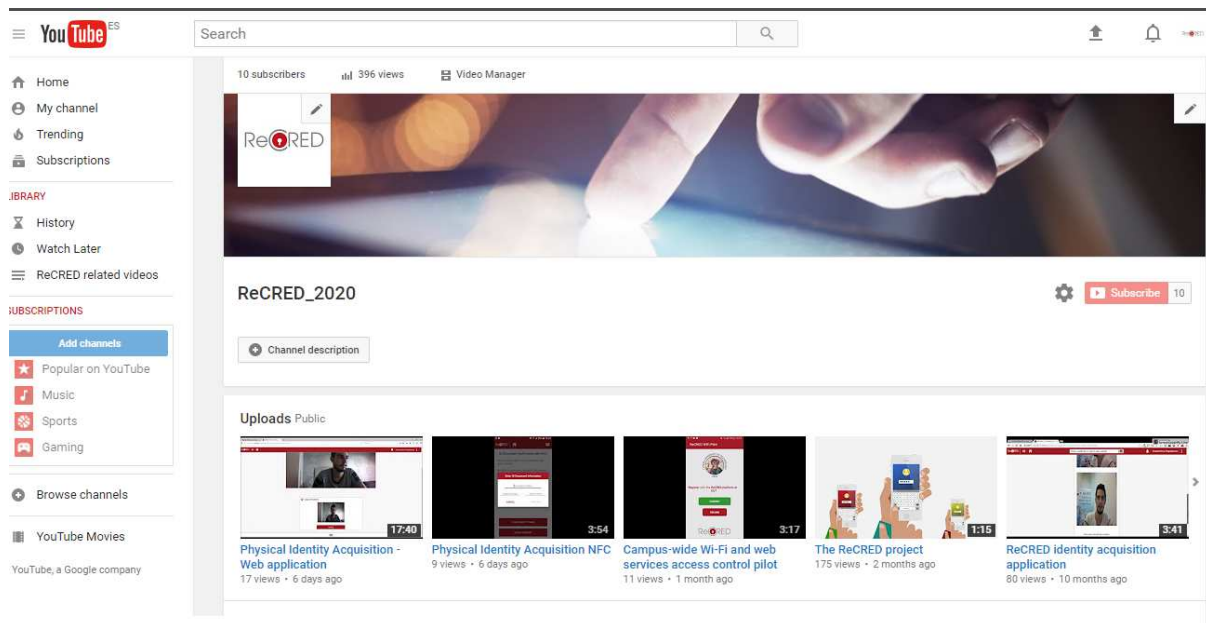


Figure 16 Project's YouTube page

Project's YouTube channel also hosts the project's video that has been implemented by WEDIA to promote the project's main concepts to the general public, in an easy to understand way raising wider interest.

Following are numbers regarding the statistics of the social media pages.

ReCRED's Facebook page currently has 201 followers, 205 likes, 33 posts (On 10/2016 we had 22 and on 05/2016 we had 10)

Linkedin group: 75 members. 18 discussions. On January 2017, 67 members and on May 2016, 52 members.

Twitter: 33 followers, 30 tweets (On October we had 21 tweets, 31 followers and on M5 we had 9 tweets & 23 followers)

YouTube channel has 10 subscribers and 396 total video views.

Traffic is slowly but steadily increasing. We expect to have more traction and traffic during the pilots as more real users will be reached out to actually use project's components.

Below are the links to the project's accounts.

Facebook: <https://www.facebook.com/ReCREDH2020/>

Twitter: https://twitter.com/ReCRED_H2020

Linkedin Group: <https://www.linkedin.com/groups/8470632>

YouTube channel: ReCRED_2020 . https://www.youtube.com/channel/UCIVzn8b6g_vE3dxzV1sli0g

4 Project's Video

Project's video plays a very important role in communicating project's concepts to the general public. WEDIA implemented the video following specific requirements:

- Communicate a clear message in short time.
- Adopt a modern design
- Follow current trends on videos promoting similar ideas

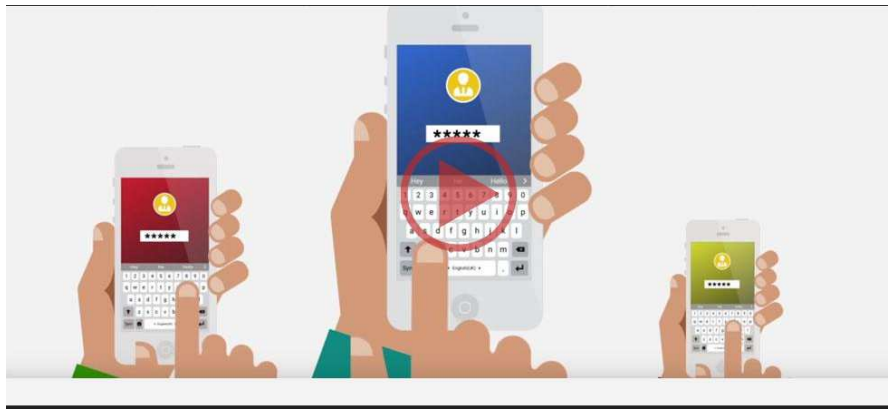


Figure 17 A screenshot from the project's video

The implementation of the video was based on the following steps

- Script preparation
- Speakage (duration 1'15")
- Moodboard design
- Video 1st and 2nd version
- Sound and music mix

The video attracted a lot of traffic and it currently has 175 views on YouTube and 383 views on Facebook.

The video can be found here:

https://www.youtube.com/watch?v=OBNU_XXyPrE

5 Project's leaflet and poster

During the first year of the project the consortium designed a leaflet/ brochure and a project poster that have been used in workshops, talks and other dissemination activities. In the second year, as the project implementation advanced the need of an updated, fresh brochure and project poster arose. Following modern design principles EXUS implemented the second project leaflet and poster.

The content of the leaflet has been re-defined in order to better present the project purpose, advantages, technologies and pilots.



Figure 18 The project's poster

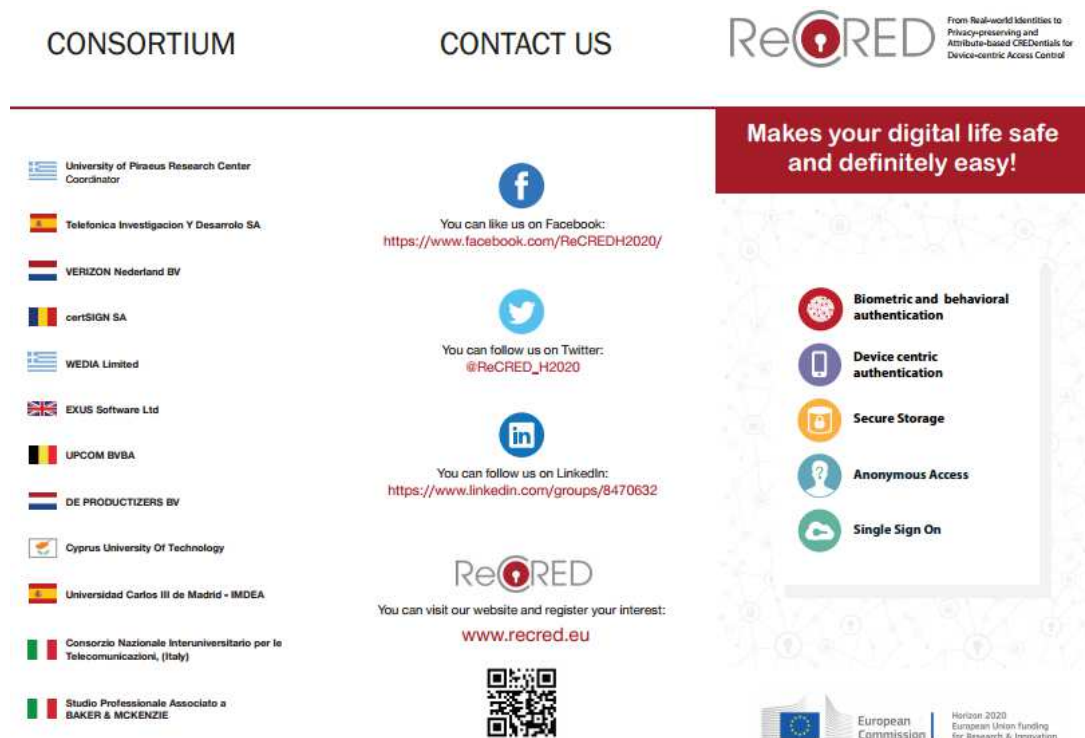


Figure 19 Project's re-designed leaflet page

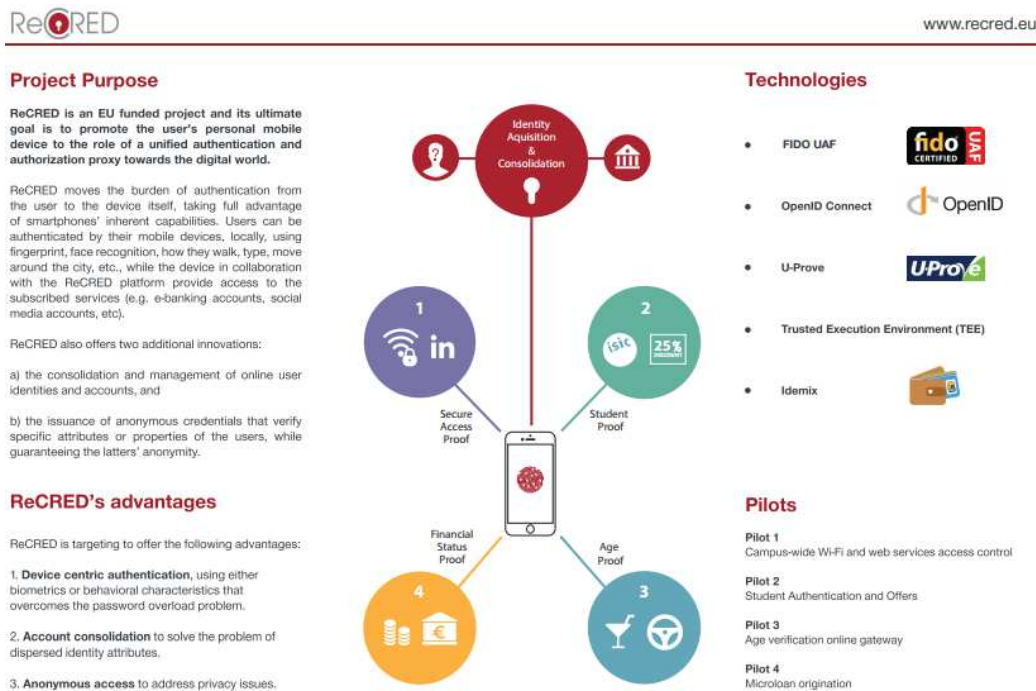


Figure 20 Project's re-designed leaflet. Page 2.



Project Poster have been already used in the "7th InfoCom Security Conference" that took place in Athens on 29 & 30 of March 2017, where the UPRC presented to a large audience the ReCRED project and its impact to the security domain.

6 Project newsletter

ReCRED consortium employed another mean of dissemination that is very popular and effective, that of promoting news and events through newsletters.

The first project newsletter designed and implemented by WEDIA on April 2017 includes the following sections

- Editorial
- Project's fact sheet
- Advantages
- Project implementation

- First Pilot
- Latest news
- Publications
- Project's promotional material
- List of the consortium partners

Newsletter, April 2017

02

Contents	Information		
EDITORIAL2 ADVANTAGES3 IMPLEMENTATION4-5 1ST PILOT6 LATEST NEWS7 PUBLICATIONS8 PROMO MATERIAL8 PARTNERS9	 http://www.recred.eu/  https://www.linkedin.com/groups/8470632  https://www.youtube.com/channel/UCIVzn8Bog_VE3dxzV1sli0g  https://twitter.com/ReCRED_H2020  https://www.facebook.com/ReCREDH2020/		
PROJECT REFERENCE 653417	FUNDED UNDER H2020-EU.3.7.	TOTAL COST 6,366,310 €	EU CONTRIBUTION 4,997,242 €

Editorial



Dear reader,

We are happy to introduce you to the ReCRED newsletters, a great vehicle for our consortium to communicate our project's achievements, activities and results. Approaching its third and final year, ReCRED is very close to fulfill its original objectives, advancing the authentication paradigm by establishing a secure-by-design and privacy-preserving device-centric authentication and access control. Co-funded by the Horizon H2020

Framework Programme of the European Union under grant agreement no. 653417, ReCRED is the product of the coordinated effort of 13 partners from 8 European countries, sharing the same goal.

The application-centric authentication model, where independent services apply individual authentication methods to verify the user's identity, has long ago failed: it's neither usable, nor secure. The ubiquity of the smartphones has laid an excellent basis for the authentication scheme to shift towards the device-centric model, where the user authenticates to a local device and the

Figure 21 Part of the newsletter

The newsletter has been sent to a large list of contacts that partners have provided. People from the IT industry and especially of the IT security sector, professors and researchers were included in the recipients list, while an online subscription form is also available in the project’s website in order for visitors to be able to register and receive the project’s newsletters.

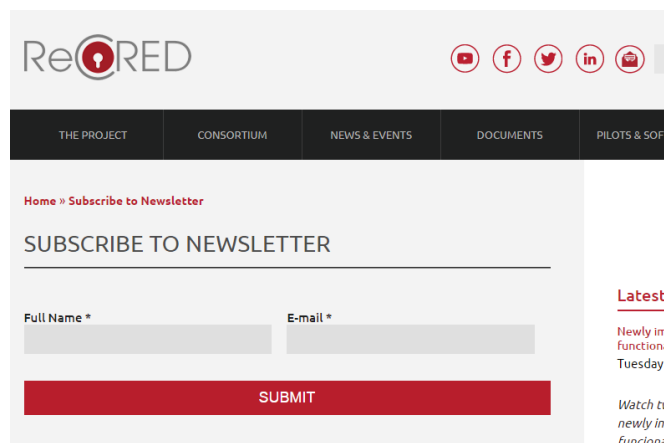


Figure 22 The subscription to the newsletter form

The newsletter can be found here.

http://www.recred.eu/sites/default/files/recred_1newsletter.pdf

The next newsletter is planned to be distributed in June and will include information about the pilots, the latest news and publications as well as more implementation details.

7 ReCRED whitepapers

As a very innovative project, ReCRED has a lot to share regarding new technologies, concepts and technical challenges. In order to disseminate the acquired knowledge, the consortium will release a number of whitepapers each one discussing important aspects of the ReCRED project.

The first whitepaper, written by Prof. Christos Xenakis and Eleni Veroni from University of Piraeus has the title “Killing Passwords: Strong Authentication Beyond the Password Era” and is available through the project’s website in English and in Greek.

The English version can be found here http://www.recred.eu/sites/default/files/paper_eng.pdf

Next the following whitepapers are scheduled to be released

Topic	Partner
Privacy, security and personalization. Trade-offs and regulation	WEDIA
Behavioral Authentication Authority (BAA)	TID
How Identity federation based on the ID consolidator combined with identity acquisition enhances authentication solutions	CUT
ABAC subsystem and the advantages of using it in real world (e.g. enterprise) scenarios	CNIT
- Complex Architecture System Integration - FIDO in a nutshell	CSGN

Description of the four pilots , as real business cases that take advantage of the ReCRED platform and the developed modules	UPCOM
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8 ReCRED in the media

A very important channel of dissemination of the project's concepts is the local media that have a wide and general audience. Local newspapers, magazines and television shows are the most popular means of dissemination to people with limited expertise and knowledge on technology issues. Although this is a difficult channel to access, ReCRED partners have managed to present the project to local media.

ReCRED Advertised Through The Event Of The Cyber Security Contest

Prof. C. Xenakis of UPRC was invited to represent the Greek participation and talk about Cyber Security on national television (ERT).

As Greece will participate in the European Cyber Security Challenge for the first time, there was a high turnout of young students and hopeful hackers that came to support the event and also had the chance to learn about UPRC's research activities, including, of course, the ReCRED project.

The Greek media showed great interest in covering the event and supporting the effort. One of the most visited news sites (in.gr) and one of the few security blogs in Greece (SecNews.gr), hosted both an article regarding the activity, where ReCRED is mentioned as part of UPRC's research projects. ReCRED is also mentioned in the YouTube video of the presentation of the Cyber Security contest.

Link to the news article: <http://www.recred.eu/news-article/89/recred-advertised-through-event-cyber-security-contest>

ReCRED in the Horizon Magazine

An article has been posted on the Horizon Magazine that refers to the ReCRED project.

UPRC and Professor Christos Xenakis have given an interview to Horizon Magazine, for an article entitled: "You could be tracked by your payment-enabled phone", which refers to security of online transactions as well as password overload.

The significance and the contribution of ReCRED project on the safeguarding of online transactions was pointed out, while its purpose was explained and its innovative design idea was described.

The article appeared on the Horizon online magazine, which is EU's magazine for Research and Innovation on the 5th of July and can be found on the following link:

Link to the news article: http://horizon-magazine.eu/article/you-could-be-tracked-your-payment-enabled-phone_en.html

ReCRED is mentioned in the Forbes Romania magazine (in Romanian)

http://www.recred.eu/sites/default/files/forbes_romania_-_recred.pdf

ReCRED White Paper In Technological Journal

UPRC has composed and published, in one of the most widely known Greek technological journals (named: It Security Professional), the first ReCRED white paper, which analyzes, in simple words, the overall project objectives. The paper, entitled Killing Passwords: Strong Authentication beyond the Password Era.

Link to the news article: <http://www.recred.eu/news-article/102/recred-white-paper-technological-journal>

ReCRED In Verizon's Blog

“Identity protection: Can we afford to sit back and relax?”

Verizon's article about Identity Protection displays password-weakness within the continued growth in online transactions, the rise of the sharing economy and the emergence of the Internet of Things, as well as, the need for reliable, user-friendly authentication mechanisms. In this article ReCRED project is mentioned as one of the research projects that Verizon is working with various industry and academic institutions.

9 Standardization and certification activities

A major achievement for the project is the FIDO UAF certification that certSIGN obtained.



More specifically, the FIDO (Fast Identity Online) Alliance certified that gateSAFE UAF module complies with the FIDO UAF specifications. The product was developed and implemented by certSIGN as part of the ReCRED project, making it one of the very few open source FIDO® Certified UAF Servers. The implementation successfully passed the Interoperability tests – performed with international partners from different countries, on Windows, Android and iOS clients – that took place in December 2016 and the subsequent FIDO Alliance review.

Furthermore, steps have been taken towards achieving other standardization and certification actions. The consortium is exploring potential collaboration with NIST, ABAC – ETSI and Open Identity

Exchange UK (OIX UK). ReCRED has already been presented in OIX (Open Identity Exchange)/OIDF (OpenID Foundation) Workshop.

10 Dissemination workshops and presentation on events

ReCRED partners are always seeking opportunities to present and discuss the project at workshops and various security related events. In this section we describe the presentations that took place during the second year of the project.

ReCRED's presentation in Trust in Digital World (TDW) conference - Den Haag, June 15-16, 2016, from Verizon

Verizon presented the ReCRED project at Trust in the Digital World (TDW) conference in Den Haag on June 15-16. ReCRED was well received and the key note speakers highlighted the need for attribute based access control with similar use cases/ implementations as proposed by ReCRED project. In addition, speakers highlighted crypto based privacy solutions related to the attribute exchange amongst various parties (service providers, Identity providers, Data providers etc). This is also an important element that is covered in ReCRED project.

Verizon had a ReCRED booth, where the project was explained to people showing interest and a demonstration through the app for Campus WiFi pilot was implemented. Additionally, ReCRED leaflets were distributed. Gifts from Verizon, such as mobile charging power bank, Wireless mouse, Security Flash cards, DBIR Report etc. were offered to people visiting the stand while they were being informed on the ReCRED project.

http://www.recred.eu/sites/default/files/tdw2016_verizon_recred_v1.0.pdf

ReCRED's Presentation At The International Hellenic University (IHU)

ReCRED was presented by UPRC to an audience of university students/graduates, as well as other members of the ICT and security industry, in the framework of an event hosted by the International Hellenic University (IHU) in the city of Thessaloniki - Greece.

C. Xenakis from UPRC was invited to present ReCRED's approach for device-centric access control, focusing on how the work being carried by the project helps addressing, among others, the password management issue.

Please find out more here:

<http://www.recred.eu/news-article/88/recreds-presentation-international-hellenic-university-ihu>

CNIT Delivers An ETSI Report

CNIT has composed and delivered an ETSI report, entitled: Personally Identifiable Information (PII) Protection in mobile and cloud services.

The document proposes a number of scenarios focusing on today's ICT and develops an analysis of possible risks, threats and vulnerabilities in mobile and cloud based services. It also presents technical challenges and needs derived from regulatory aspects (lawful interceptions). The intent is to consolidate a general framework, in line with regulation and international standards, where technical solutions for PII protection can be plugged into

<http://www.recred.eu/news-article/99/cnit-delivers-etsi-report>

ARES / FASES2016 Conference



The ReCRED consortium co-organized along with the TYPES (Towards Transparency and Privacy in Online Advertising Business – EU-2020) consortium the “Workshop on Future

Access Control, Identity Management and Privacy Preserving Solutions in Internet Services”- FASES 2016. The workshop was held in conjunction with the 11th International Conference on Availability, Reliability and Security (ARES 2016), August 31 to September 2, in Salzburg, Austria. The goal of this symposium was to organize a set of technical sessions covering topics of interest for ReCRED and TYPES projects and create a forum of discussion around current issues identified within the context of the European Union.

The ReCRED consortium contributed 4 scientific papers to the workshop and representatives from all academic partners (UPRC, CNIT, CUT, UC3M) were there to present their work and support the event.

ReCRED Presentation In The Framework Of The European Cyber Security Month (ECSM)

European Cyber Security Month (ECSM) is the EU's annual advocacy campaign that takes place in October and aims to raise awareness of cyber security threats, promote cyber security among citizens and provide up to date security information, through education and sharing of good practices. In the context of this year's ECSM, an event was organized at the premises of UPRC, where various partners, such as the Hellenic Police Cybercrime Division, the Hellenic Authority for Communication Security and Privacy (ADAE), the Ionian University, ENISA and of course UPRC, joined their efforts and presented their activities. C.Xenakis was invited to present ReCRED and its objective, along with the state-of-the-art technologies that are employed by the project. During his presentation, C.Xenakis focused on the biometric authentication concept, which, based on physiological and behavioral features of the user, achieves a highly secure authentication scheme that can replace the overused and unreliable passwords.

The event was mainly addressed to undergraduate and postgraduate students of the university, that are interested in cyber security related topics, but it was welcomed with great support from the members of all the invited parties.

Link to the news article: <http://www.recred.eu/news-article/101/recred-presentation-framework-european-cyber-security-month-ecsm>

Presentation Of CertSIGN In The Information Security Solutions Europe Conference

CertSIGN presented technologies that ReCRED is implementing at the Information Security Solutions Europe (ISSE 2016) conference that took place in Paris, France on 15 and 16 November 2016.

The feedback from the audience (ICT security professionals, policy makers, European industry, research institutions) was very good showing interest in the idea of combining FIDO and uProve protocols.

Link to the news article: <http://www.recred.eu/news-article/104/presentation-certsign-information-security-solutions-europe-conference>

Prof. Xenakis Speech At The Center For Security Studies

The Center for Security Studies (KEMEA) in Greece, organized a 3-day anniversary event, in December 2016, for its 11th year of operation. C.Xenakis was invited as a guest speaker at the “Cyber threats and technology exploitation” workshop which took place during the event. C.Xenakis presented UPRC’s research “Attacking the modem of mobile devices”, which was partially funded by ReCRED. Among the over 450 participants of the event were representatives from the Greek authorities, security forces, universities, research institutes, organizations, companies and NGOs.

Link to the news article: <http://www.recred.eu/news-article/114/prof-xenakis-speech-center-security-studies>

Prof. Xenakis Speech For Greek National Cyber Security Strategy And Policies

KEMEA is supervised by the Minister of Public Order and Citizen Protection and it is a scientific, consulting and research agency, whose purpose is to conduct theoretical and applied research and to perform studies, particularly at the strategic level, on security policies.

ECISO represents an industry-led contractual counterpart to the European Commission for the implementation of the Cyber Security contractual Public-Private Partnership (cPPP). The main objective of ECISO is to support all types of initiatives or projects that aim to develop, promote, encourage European cybersecurity.

Invited to the closed session were representatives from the Greek Public Authorities and Administration, the academic community and the corporate sector.

During the discussion that took place at the end of the session, the attendees agreed on how a secure-by-design platform like ReCRED, specifically developed to also protect user's privacy, would greatly help mitigating authentication attacks on the World Wide Web

Link to the news article: <http://www.recred.eu/news-article/115/prof-xenakis-speech-greek-national-cyber-security-strategy-and-policies>

ReCRED Presence In MWC, Barcelona

Verizon was present at the Mobile World Congress in Barcelona (27 February - 2 March 2017), in order to meet major industry players, generate interest in the ReCRED project, and drive towards potential collaborations. Discussions with several technology providers such as Nok Nok labs, Safran, MePIN and ShoCard took place and reference to the ReCRED project was made in the panel session on IoT Security (live telecast).

Link to the news article: <http://www.recred.eu/news-article/112/recred-presence-mwc-barcelona>

ReCRED At The 8th Scientific Workshop For Students: "Security For Everything, Everyone, Anytime" Of The IEEE University Of Thessaly (Lamia) Student Branch

IEEE University of Thessaly (Lamia) Student Branch hosted its 8th Scientific Workshop for Students: "Security for everything, everyone, anytime", on Tuesday, March 21st 2017. The event took place at the University's premises and the admission was free to everyone interested in the topic. Scientists from all over Greece were there to present their research projects on Security and support the IEEE workshop. Afterwards, a Capture-the-Flag contest also took place, where the contestants had the chance to virtually prevent a terrorist attack. Prof. C.Xenakis was invited to the workshop and his presentation was based on the UPRC's ReCRED white paper, titled "Killing Passwords: Strong Authentication beyond the Password Era", giving an overview of the project, as well as explaining its impact on today's digital society.

Over 200 students, faculty members and researchers attended the IEEE workshop.

Link to the news article: <http://www.recred.eu/news-article/120/recred-8th-scientific-workshop-students-security-everything-everyone-anytime-ieee>

ReCRED Presentation At The "7th InfoCom Security Conference"

The 7th InfoCom Security Conference (29 & 30 March 2017), titled “On the IT Roadmap – Expect the Unexpected”, has been a point of reference for developments on Business IT & Cyber Security and the top annual summit for IT security professionals in Greece. Like every year, the conference’s participants included CTOs, CIOs, IT Managers, IT Administrators, IT Security Managers, IT Auditors, etc., from major



companies and organizations in the public and private sectors. IT professionals who specialize in project implementation and solution provision, as well as many academics, scientists, researchers and young security enthusiasts were also there to support the 2-day event.

This year, Christoforos Ntantogian from UPRC, was invited to present ReCRED’s approach for device-centric access control, demonstrating the state-of-the-art technologies incorporated by ReCRED and how, combined, they can address the security and usability problems posed by passwords.

11 Scientific publications

The ReCRED consortium has a strong presence in the security related conferences and journals. The academic partners’ activity has resulted to more than 17 scientific papers in prestigious venues. Below are some of the latest related publications.

All project related publications, including the pdf documents, are available at the ReCRED website. <http://www.recred.eu/publication-categories/publications>.

Last project year’s publications are listed below:

Victor M. Lopez Millan, Vicent Cholvi, Antonio Fernandez Anta, Luis Lopez , “Resource location based on precomputed partial random walks in dynamic networks.”. Computer Networks, Volume 103, 5 July 2016, Pages 165–180.

K. Papadamou, R. Samaras, and M. Sirivianos. "Ensuring the Authenticity and Fidelity of Captured Photos using Trusted Execution and Mobile Application Licensing Capabilities". In Proc. ARES Workshop on Future Access Control, Identity Management and Privacy-preserving Solutions in Internet Services (FASES) 2016

Claudio Pisa, Alberto Caponi, Tooska Dargahi, Giuseppe Bianchi, Nicola Blefari-Melazzi. WI-FAB: Attribute-Based WLAN Access Control, Without Pre-shared Keys and Backend Infrastructures, In proc. International Workshop on Hot Topics in Planet--scale mObile computing and online Social neTworking (HotPOST’16). 2016 Paderborn, Germany.

Christos Xenakis, Christoforos Ntantogian, Orestis Panos, "(U)SimMonitor: a mobile application for security evaluation of cellular networks," Computers & Security, Elsevier Science, Vol. 60, Issue 1, pp: 62-70, July 2016

Stefanos Malliaros, Christoforos Ntantogian, Christos Xenakis, "Protecting sensitive information in the volatile memory from disclosure attacks", In proc. 11th International Conference on Availability, Reliability and Security (ARES), 2016

Luigi Stammati, Claudio Pisa, Tooska Dargahi, Alberto Caponi and Giuseppe Bianchi (University of Rome "Tor Vergata", Italy), "FEBA: An Action-Based Feature Extraction Framework for Behavioural Identification and Authentication", In proc. 11th International Conference on Availability, Reliability and Security (ARES), 2016.

Mihai Togan, Bogdan Chifor, Ionut Florea, and George Gugulea. certSign Romania and Military Technical Academy, Computer Science Dept., Bucharest, Romania. "A privacy preserving authentication service using mobile devices". Information Security Solutions Europe – ISSE 2016, 15th-16th November 2016, Paris, France

Moreno Ambrosin, Arman Anzanpour, Mauro Conti, Tooska Dargahi, Sanaz Rahimi Moosavi, Amir M. Rahmani, Pasi Liljeberg. On the Feasibility of Attribute-Based Encryption on Internet of Things Devices - IEEE Micro 36(6), November 2016.

Christoforos Panos, Christoforos Ntantogian, Stefanos Malliaros, Christos Xenakis. Analyzing, Quantifying, and Detecting the Blackhole attack in Infrastructure-less Networks. Computer Networks (journal), Volume 113, 11 February 2017, Pages 94–110

12 Planned future actions

The project has already entered a very crucial phase. Most of the modules and the components have been completely implemented and the integration phase has begun. The pilots of the project are also ready to be deployed and the evaluation phase of the project will follow. The dissemination activities should focus on communicating the progress of the project but also on highlighting the exploitation potentials. To this end the consortium should do the following:

- Constantly update website
- Generate posts on social media at a frequent base (Facebook, twitter, linkedin)
- Publish the planned whitepapers and newsletters
- Produce and publish demos-videos of the pilots
- Maintain current pace of journal/conference paper publications and workshop participation
- More academic partners to investigate the potential to create academic courses based on ReCRED outcomes
- Presentations at related events and workshops to demonstrate ReCRED and gain interest of the industry.

13 Dissemination assessment and Conclusions

During the first year of the project a lot of effort has been put by the partners to disseminate the project's goals and objectives. These efforts have been increased during the second year of the project resulting in reaching a wider audience and making the project known to industry and academia as well as to general public.

In the proposal of the project the consortium defined specific KPIs that would indicate the progress of the dissemination effort. Overall, project dissemination activities have reached and in many cases exceeded these KPIs. Specifically, in the table below we present the numbers of the dissemination activities so far, compared to the project's initially defined KPIs.

The achievement of the KPIs of the project sets the challenge to the consortium to raise the expectations and exceed the initially set KPIs while of course continuously trying to reach the non-succeeded ones. In the table below we present a summary of the proposed and the achieved targets.

Communication Action	Description	Performance Indicators	Target Values	Target Audience	Achieved Values until today
Web Site	Project website: information about the project technological and scientific results	Unique visits to the web site	50+ unique visits per day at the end of the project	All	10+ views per day on average Max: 33 10+ sessions per day on average Max: 38 (In the last 3 months period)
Journal Publications	Publications in top scientific journals	Accepted articles	One article per year per academic partner	Scientific community (and industry)	2 journal publications
Conference Participation	Presentations (and publication) at top international conferences and workshops	Number of conferences attended	One conference / workshop per year per academic partner	Scientific community (and industry)	17 total publications and presentations
Graduate-level Courses	Results of ReCRED in graduate level courses	Number of courses	One course per academic partner	Scientific community (and industry)	UPRC: 1 graduate +1 post-graduate course UC3M: Some of the methodologies for data

					collection and identity integration developed as part of Re-CRED have been presented in the course “Internet Measurements” from the MSc in Telematics Engineer offered at UC3M
Project Workshop	Final dissemination workshop with presentation of results, open call for papers, and industry sessions	Number of workshop attendants	At least 100 attendants	Scientific community (and industry)	Workshop FASES2016 at ARES conference.
Trade Fairs Participation	Participations and/or presentations in fairs and trade shows	Number of events attended	Two events per year	Industry and trade organizations	4 participations
Demonstrations of the pilots	Demonstration of the pilots at demo sessions of conferences and at companies	Number of demos done	- Two demos at conferences the final year of the project - One demo to a company per partner the final year	Industry and trade organizations	Verizon had a ReCRED booth in Trust in the Digital World (TDW) conference where the Campus WiFi pilot was demonstrated.
Dissemination Package	Brochure and press releases with technological achievements, services and products	Brochure downloads; number of press releases	1000 downloads; at least 2 press releases per year	Media and public in general	Project poster: http://www.recred.eu/sites/default/files/recred_poster_2017_fv_a3size_1.pdf Project leaflet: http://www.recred.eu/sites/default/files/recred_leaflet_2017_3.pdf
Online Social Networks presence and activity	Creation of profiles and activity in social networks for ReCRED	Number of networks with presence; posts in each network	Presence in 4 social networks; 1-2 post per month	Media and public in general	Facebook: https://www.facebook.com/ReCREDH2020/

					<p>201 followers, 205 likes, 33 posts</p> <p>Twitter: https://twitter.com/ReCRED_H2020</p> <p>33 followers, 30 tweets</p> <p>Linkedin Group: https://www.linkedin.com/groups/8470632</p> <p>75 members, 18 discussions</p> <p>YouTube channel: ReCRED_2020 . https://www.youtube.com/channel/UCIVzn8b6g_vE3dxzV1sl_i0g</p> <p>10 subscribers and 396 total video views.</p>
Articles in popular science magazines	Article describing the project to the general public in a wide audience magazine	Number of articles	At least 2 articles	Media and public in general	<p>1 newspaper article</p> <p>2 articles in magazines</p> <p>1 appearance in local TV</p>
Interaction and coordination with other projects	Identification and coordination with related project in the same call	Number of projects	At least 2 projects	Scientific and industry community	<p>Common plenary meeting disseminating projects results and exploring collaboration potentials with IRMA (I Reveal My Attributes)</p> <p>Co-organized an ARES Workshop (FASES 2016) along with the TYPES EU Project consortium.</p>

Aiming at a high rate of dissemination to the general public and of the acceptance of the project's outcomes from the industry, the consortium has to keep seeking for opportunities for communicating the project's progress and achievements not only until the end of the project and beyond.