



PAINLESS

Energy-autonomous portable access points for infrastructure-less networks

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ITN - Innovative Training Network

D4.2 –Feedback reports for summer school 1 (SS1) and summer school 2 (SS2) and planned improvements

WP 4 – Training and Mobility

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Dissemination Level		
PU	Public	✓
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



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History table

Version	Date	Released by	Comments
V1	25.06.2020	Nithin Babu, Muhammad Haroon Tariq	Initial version
V2	26.06.2020	Dr. Constantinos B Papadias	Review
V3	29.06.2020	Dr. Christos Masouros, Dr. Jimmy Nielsen	Review



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1 Summer school 1 (SS1)

The first MSCA ITN PAINLESS summer school took place at Stelios Ioannou Library at University of Cyprus, Cyprus. It was organised by the IRIDA Research Centre for Communication Technologies. During the two days of the Summer School (9-10 September), some interesting sessions with courses and industrial lectures were delivered by highly reputed professors and researchers from University of Cyprus, University College London, Athens Information Technology, NOKIA and The University of Manchester. A total of **90 participants** registered for the school, out of which 66 (35 from PAINLESS) attended the sessions at campus while 24 were on livestream connections.

1.1 Summary of the talks/trainings

Topics focused the theme of PAINLESS i.e., Energy-autonomous portable access points for infrastructure-less networks. The details of the topics and speakers are given below;

no	Speaker	Topic
Day 1		
1.	David Lopez Perez (NOKIA)	Fundamentals of Wireless Networks
2.	Dr. Dimitris Ntaikos (Athens Information Technology - AIT)	Antennas, Antenna Systems & Radio Propagation in Next Generation Communication Systems- Part I
3.	Dr. Constantinos Papadias (Athens Information Technology - AIT)	Antennas, Antenna Systems & Radio Propagation in Next Generation Communication Systems- Part II
Day-2		
1.	Dr. Konstantinos Ntougias (Athens Information Technology - AIT)	Radio Resource Management – from LTE towards 5G
2.	Adrian Garcia Rodriguez (NOKIA)	Fundamentals of UAV communications
3.	Lorenzo Galati Giordano (NOKIA)	Wireless Backhaul-Fronthaul I
4.	Emad Alsusa (University of Manchester)	Wireless Backhaul-Fronthaul II
5.	Ioannis Krikidis (University of Cyprus)	Wireless powered communications
6.	Dr. Konstantinos Ntougias (Athens Information Technology - AIT)	Writing, Reviewing and Presenting Scientific Work

The registration to the public was announced through social media platforms and the PAINLESS website; some of the social media links are;

<https://www.youtube.com/playlist?list=PLr6zPj5GAvRKCXrH0Q1gmT9TcBAQ8ruVj>

<https://www.facebook.com/PainlessITN>

<http://painless-itn.com/training-activities>

<https://www.linkedin.com/company/painless-itn>

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https://www.instagram.com/p/B7WklCaHBup/?igshid=uq8vmpvc6tg4&fbclid=IwAR397iSK1Tjozaly2UiXUwtGy0ynluPgYZ69R_FWT2GGBxezHVI6_2R2VPA

1.2 Highlights



1.3 Feedback report

At the end of the sessions, a feedback questionnaire was shared among the participants. The questions and the summary of responses are given below.

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1. Was the training overall useful?

[More Details](#)

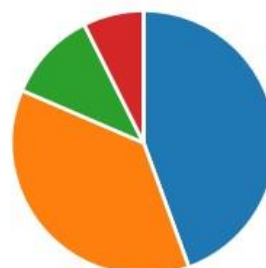
Excellent	19
Very Good	4
Adequate	4
Poor	0
Very Poor	0



2. Were the topics covered relevant to your research?

[More Details](#)

Excellent	12
Very Good	10
Adequate	3
Poor	2
Very Poor	0



3. Were the speakers knowledgeable about the subjects presented?

[More Details](#)

Excellent	22
Very Good	5
Adequate	0
Poor	0
Very Poor	0



4. Have the lectures been well prepared?

[More Details](#)

Excellent	21
Very Good	5
Adequate	1
Poor	0
Very Poor	0



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5. Was the presented material interesting?

[More Details](#)

Excellent	17
very Good	8
Adequate	2
Poor	0
Very Poor	0



6. How would you rate the use of the teaching aids (slides, overheads, handouts)?

[More Details](#)

Excellent	17
Very Good	9
Adequate	1
Poor	0
Very Poor	0



7. Was the time allotted for the training sufficient?

[More Details](#)

Excellent	9
Very Good	9
Adequate	9
Poor	0
Very Poor	0



8. Were the meeting rooms and facilities adequate?

[More Details](#)

Excellent	20
Very Good	5
Adequate	2
Poor	0
Very Poor	0



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9. What did you like most about this training?

27

Responses

Latest Responses

"Research work share is good and more informative "

"talk about fundamentals then advance"

"The presented topics especially in the second day are very interesting,..."

10. What aspects of the training could be improved?

27

Responses

Latest Responses

"Instead of 2 days you can extend this for one more day for programm..."

"nothing"

"More time or additional days of the training to have more sessions ab..."

11. Which topics would you suggest for next school?

27

Responses

Latest Responses

"More applications aspects and software programming model"

"ML"

"Energy efficiency related topics in wireless communications."

12. Please share other comments or expand on previous responses here:

27

Responses

Latest Responses

"None"

"nothing"

"That's ok"

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2 Summer school 2 (SS2)

Due to the COVID19 pandemic, the second PAINLESS summer was virtual this year. The school was coordinated by UCL and Nokia Bell labs using the WebEx platform. It included several world-renowned speakers who covered state-of-the-art wireless communications and some of the advanced mathematical tools used in the project domain. A total of **256 participants (30 from PAINLESS)** registered and attended the sessions. Because of the online mode of the school, the afternoon session of day 1 had some audio problems.



2.1 Summary of the Training/Talks

The table below shows the speakers and their respective topics.

Sl.No	Speaker	Topic
Day 1		
1	Professor Lajos Hanzo , (University of Southampton, UK)	A comprehensive overview on Integrated Ground-Air-Space Networking with particular focus on Aeronautical Ad-Hoc Networking (AANET) scenarios
2	Dr Fecerico Boccardi (Ofcom, UK)	Opportunities for innovation at the boundaries between technology and policy process.
3	Dr Oliver Blume (Nokia Bell Labs, Germany)	About Energy efficiency in cellular networks and summarized the main findings of the

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		Greentouch international project on green energy networks.
4	Dr Gunduz Deniz, (Imperial College London, UK)	An overview tutorial on Energy Harvesting Wireless Communication Networks in which he covered many of the fundamental concepts in this area including some of his own research results and findings.
5	Professor Marco di Renzo (CNRS, France)	On the fundamentals of stochastic geometry and its application in cellular networks with focus on energy efficiency optimisation.
Day 2		
6	Dr Alvaro Valcarce	On the application of machine Learning in communication systems particularly on the topic of network performance optimisation via the MAC and PHY layers
7	Professor Marco di Renzo (CNRS, France)	Model aided deep learning for wireless communication
8	Dr Laura Toni (University College of London, UK)	A tutorial on the fundamentals of artificial intelligence and machine learning within the context of intelligent network communications.
9	Mr Tim Grout-Smith & Ms Lily Poberezhska, (University College of London, UK)	Provided training on how to use the general media to effectively publicise your research.
Day 3		
10	PRISMATIC	Presented a case study on solar panel drones used for high altitude platforms.
11	Dr Ryan C Grammenos University College of London, UK)	Provided training on academic writing and presentation.
12	Dr Rob Thomson (University College of London, UK)	Provided training on public engagement.
Day 4		
13	Dr Pete James (Lyra, UK)	IPR Training

The first two days of the school were open to the public, and the next 3 days were reserved for the ESRs' research progress evaluation and discuss possible future ESR/ STUDY GROUP collaborations. The registration to the public part was announced in social media platforms, and the PAINLESS website; some of the links are given below.

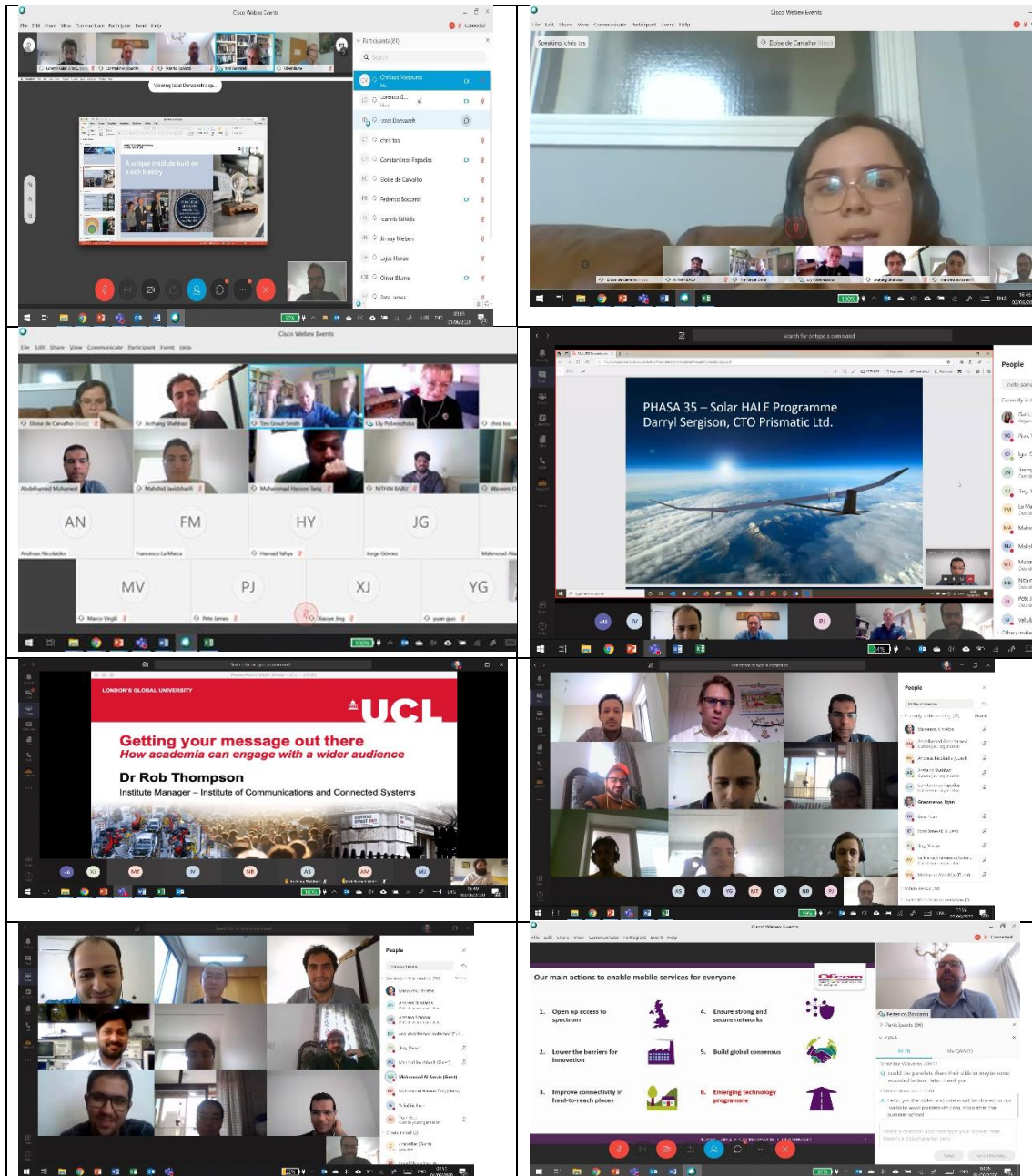
https://www.instagram.com/p/B_3Mi6rjeDI/
<https://www.instagram.com/p/CBQZVWrH2Db/>
<https://www.linkedin.com/company/painless-itn/?viewAsMember=true>
<http://painless-itn.com/2nd-painless-summer-school-1-2-june-2020-online/>



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2.2 Highlights



2.3 Feedback Report

At the end of the sessions, a feedback questionnaire was shared among the participants. The questions and the summary of responses are given below.

Deliverable D4.2

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PAINLESS 2nd SUMMER SCHOOL QUESTIONNAIRE

50

Responses

59:20

Average time to complete

Active

Status

1. Was the training overall useful?

Excellent	23
Very Good	24
Adequate	3
Poor	0
Very Poor	0



2. Were the topics covered relevant to your research?

Excellent	21
Very Good	25
Adequate	4
Poor	0
Very Poor	0



3. Were the speakers knowledgeable about the subjects presented?

Excellent	38
Very Good	10
Adequate	2
Poor	0
Very Poor	0



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4. Have the lectures been well prepared?

Excellent	25
Very Good	22
Adequate	3
Poor	0
Very Poor	0



5. Was the presented material interesting?

Excellent	29
very Good	18
Adequate	2
Poor	1
Very Poor	0



6. How would you rate the use of the teaching aids (slides, overheads, handouts)?

Excellent	22
Very Good	24
Adequate	3
Poor	1
Very Poor	0



7. Was the time allotted for the training sufficient?

Excellent	15
Very Good	23
Adequate	12
Poor	0
Very Poor	0



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8. Were the meeting rooms and facilities adequate?

Excellent	21
Very Good	17
Adequate	8
Poor	2
Very Poor	2



9. What did you like most about this training?

50
Responses

Latest Responses

"I really liked the organization, topics, discussion."

"Experts "

"the technical presentation"

10. What aspects of the training could be improved?

49
Responses

Latest Responses

"I have no comment on that"

"should involve some practical aspects"

"It was ok"

11. Which topics would you suggest for next school?

50
Responses

Latest Responses

"Internet of things, blockchain, big data"

"UAV communication for 5GB"

"More related to practical issues"

12. Please share other comments or expand on previous responses here:

49
Responses

Latest Responses

"I really enjoyed the event. I would like to thank you so much"

"Good "

"nothing"



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3 Planned Improvements

The deliverable D4. 3 -“First report on training and activities”, is a reference to summer schools progress and planning. Based on D4. 3 and the feedback from the participants we have planned the following improvements

- Include advanced topics covering all the disciplines of the project
- Provide early access to the content of the talks and timely content repository creation after the school
- Possibly use a better online platform for potential future online schools
- Further improve the logistics of on-site schools (registration desk, directions, etc.)
- Reduce the overlap between the talks
- Include more talks by the PAINLESS supervisors, to link more to the project domain
- Include topics addressing more issues related to practical / real-world / future systems
- Include more hands-on sessions
- Add more UAV-related topics
- Include topics related to energy harvesting and storage