

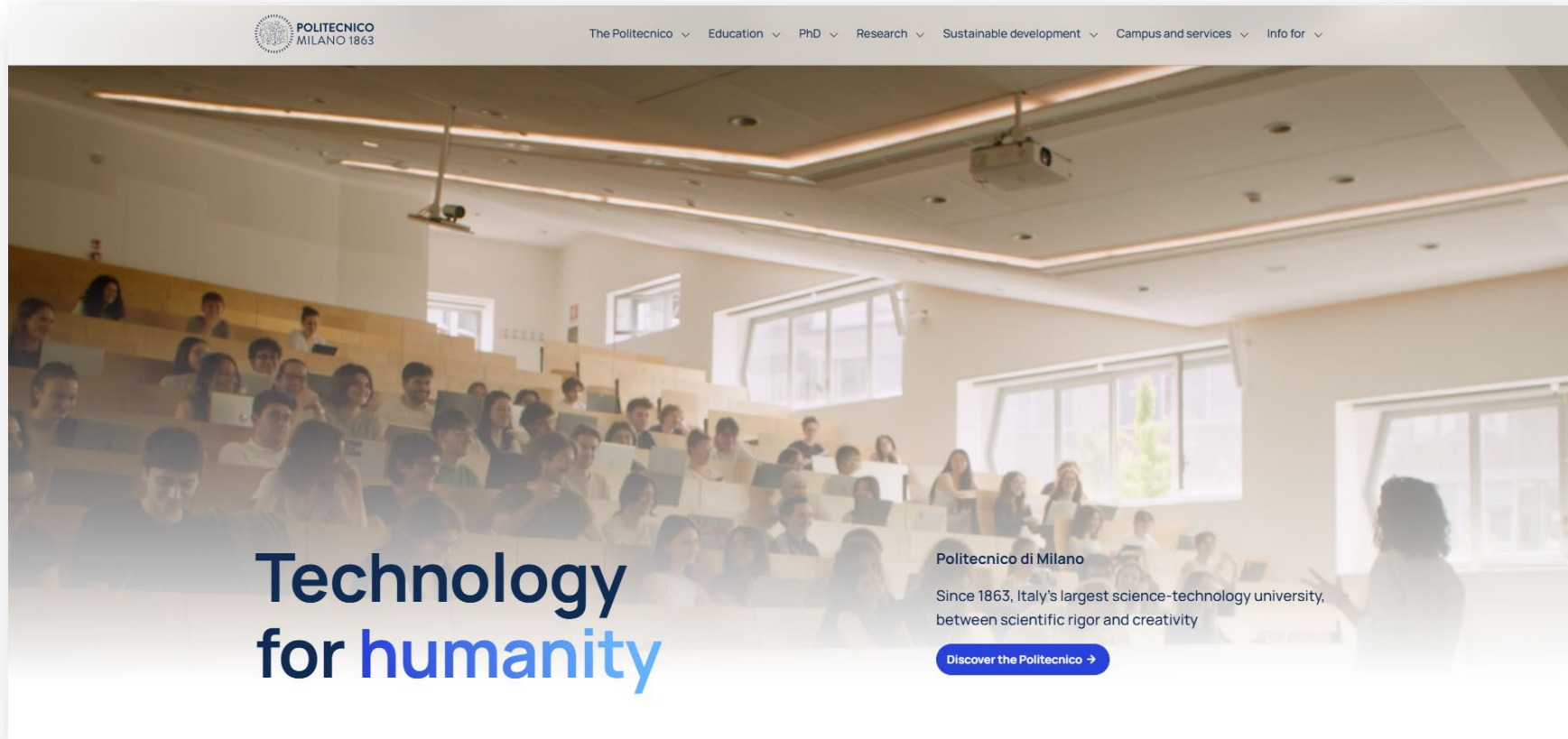
WP5 – Visibility Workshop - PoliMI



Alessandro Croce, Lucrezia Calzoni - PoliMI
Milano, 08 November 2024



Co-funded by the
European Union



Since 2024 new PoliMI Brand Identity:

- Identification of audience types
- Modern graphics and web
- Rationalization and updating of content
- Coherent and integrated platform among different systems (web, social, etc.)
- Homogeneity across structures (University, schools, departments, laboratories, etc.)

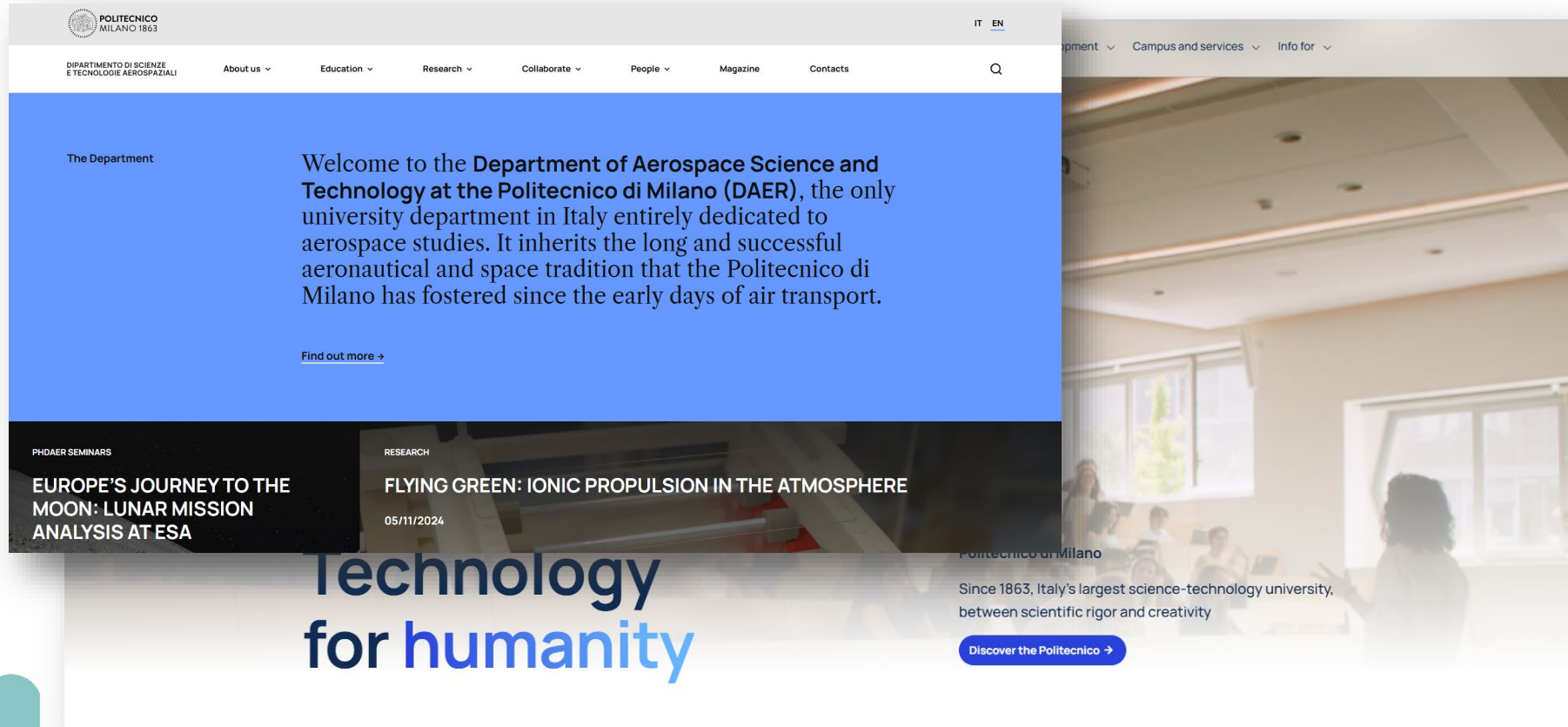


POLITECNICO
MILANO 1863

DEPARTMENT OF AEROSPACE
SCIENCE AND TECHNOLOGY

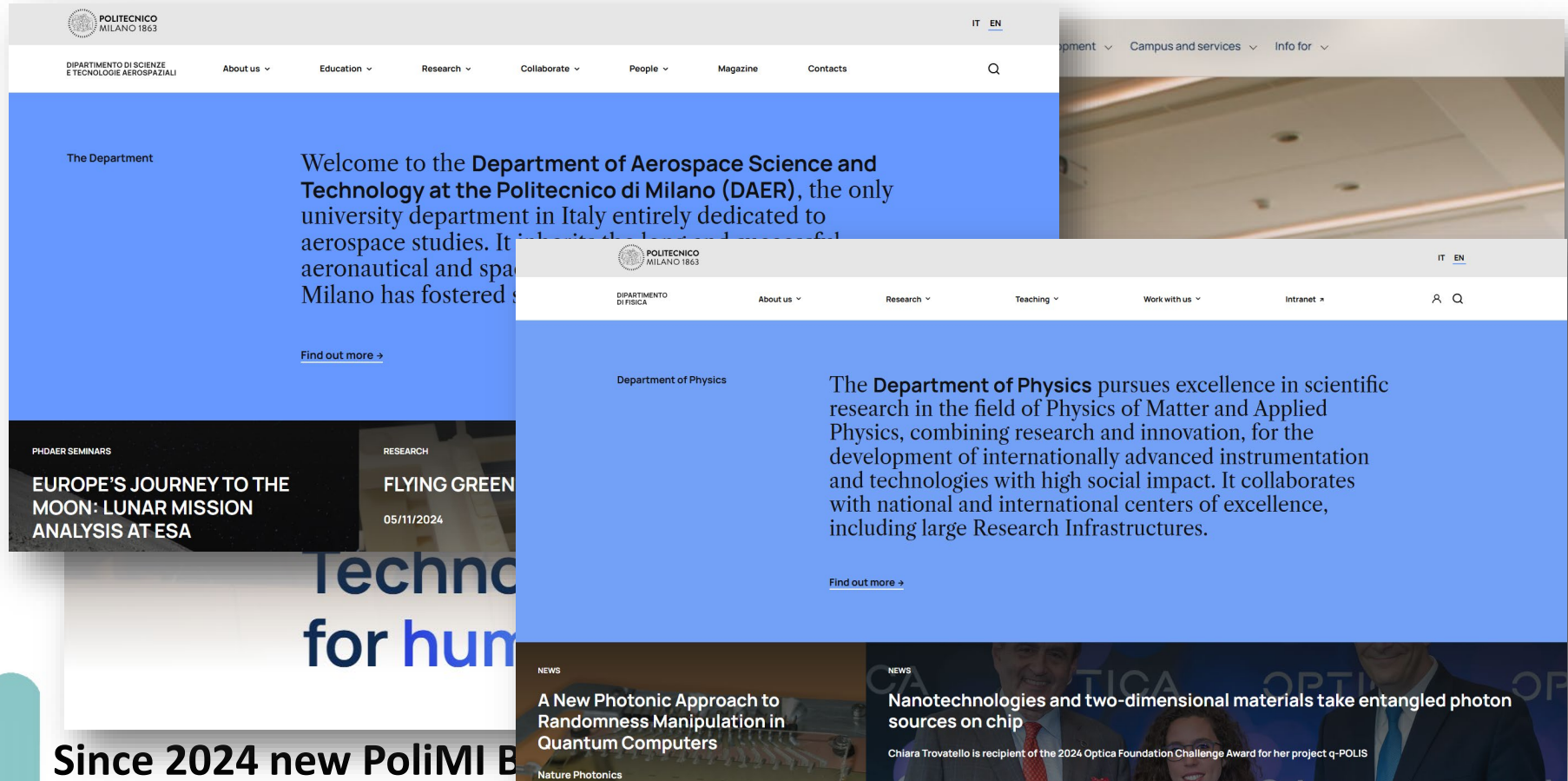


POLI-Wind



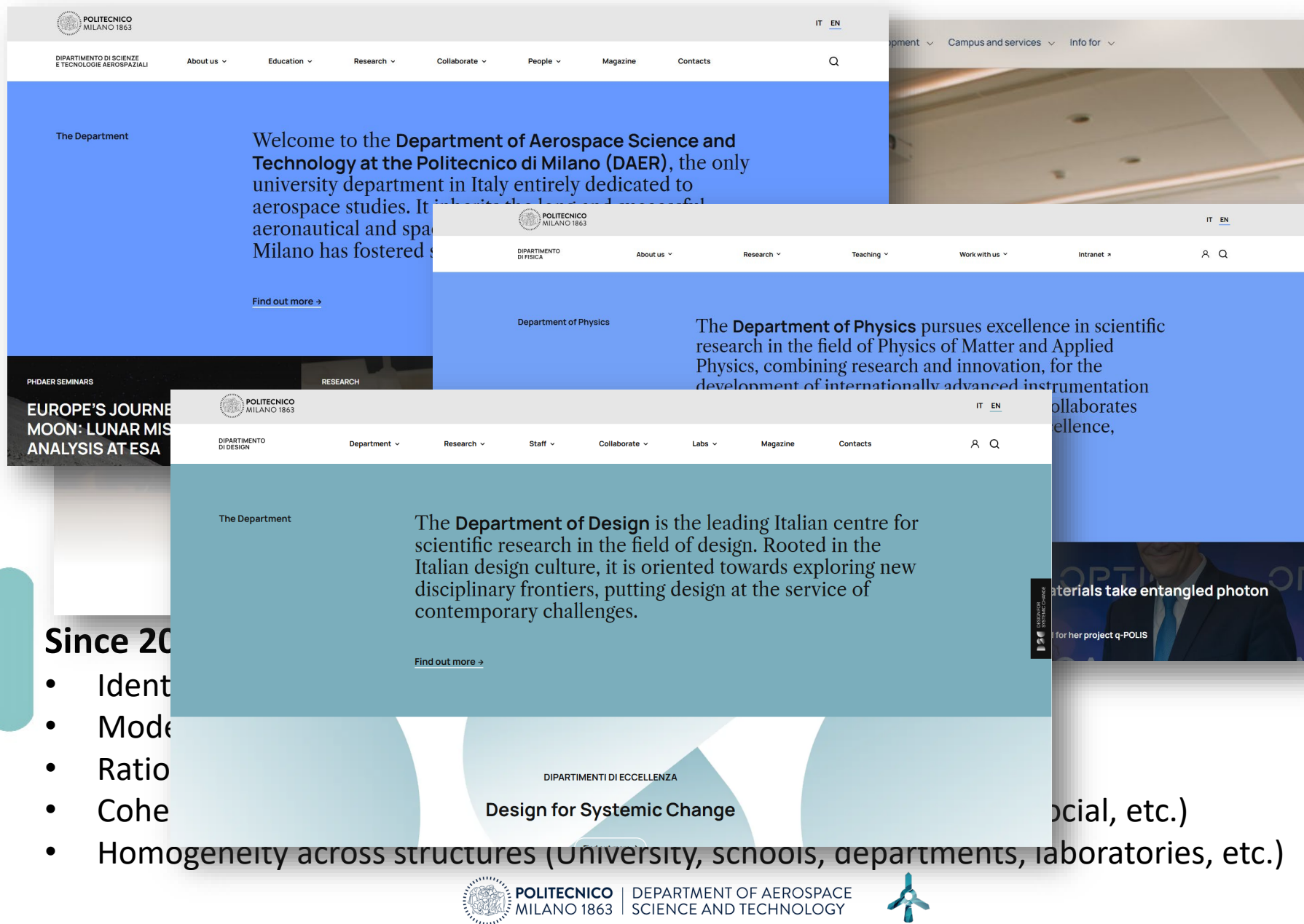
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The collage features three overlapping website screenshots from the Politecnico di Milano:

- Department of Aerospace Science and Technology (DAER):** The top-left screenshot shows a blue header with the Politecnico di Milano logo and navigation links. The main content area has a blue background with the text: "Welcome to the **Department of Aerospace Science and Technology at the Politecnico di Milano (DAER)**, the only university department in Italy entirely dedicated to aerospace studies. It includes the largest and most successful aeronautical and space research center in Italy. Politecnico di Milano has fostered..." and a "Find out more" link.
- Department of Physics:** The middle-right screenshot shows a blue header with the Politecnico di Milano logo and navigation links. The main content area has a blue background with the text: "The **Department of Physics** pursues excellence in scientific research in the field of Physics of Matter and Applied Physics, combining research and innovation, for the development of internationally advanced instrumentation and technology. The Department collaborates with leading international research centers and universities, ensuring excellence..."
- Department of Design:** The bottom-left screenshot shows a light blue header with the Politecnico di Milano logo and navigation links. The main content area has a light blue background with the text: "The **Department of Design** is the leading Italian centre for scientific research in the field of design. Rooted in the Italian design culture, it is oriented towards exploring new disciplinary frontiers, putting design at the service of contemporary challenges." and a "Find out more" link.

At the bottom of the collage, there is a section titled "DIPARTIMENTI DI ECCELLENZA" (Departments of Excellence) with the text "Design for Systemic Change".

Since 20

- Ident
- Mode
- Ratio
- Cohe
- Homogeneity across structures (University, schools, departments, laboratories, etc.)

social, etc.)

laboratories, etc.)



POLITECNICO
MILANO 1863

DEPARTMENT OF AEROSPACE
SCIENCE AND TECHNOLOGY



POLI-Wind



DIPARTIMENTO DI SCIENZE
E TECNOLOGIE AEROSPAZIALI

About us

Education

Research

Collaborate

People

Mag

The Department

Welcome to the Department of Aerospace Technology at the Politecnico di Milano (Dipartimento di Scienze e Tecnologie Aerospaziali), a university department in Italy entirely dedicated to aerospace studies. It is the only department in Italy that covers all aspects of aeronautical and space engineering. Politecnico di Milano has fostered



DIPARTIMENTO

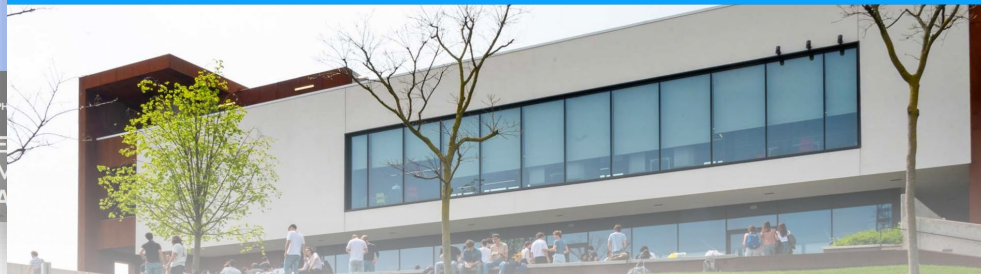
IT EN

Access Online services



SCHOOL OF INDUSTRIAL
AND INFORMATION ENGINEERING

The School Education Students



Engineering to understand reality
and imagine what does not yet exist

Since 20

- Ident
- Mode
- Ratio
- Cohe
- Homogeneity across structures (

Find out more →

Design for



SCHOOL OF ARCHITECTURE URBAN PLANNING
CONSTRUCTION ENGINEERING

IT EN

Access Online services

The School Education Students International Area



**Design, Research, Experimentation,
and Innovation for Architecture, the
City, and Construction Engineering**

Department of internationally advanced instrumentation
collaborates
excellence,

IT EN

Magazine

Contacts

Search



SCHOOL OF DESIGN

IT EN

Access Online services

The School Education Students International Area



**An integrated approach combining
creativity, technology
and sustainability for Design
education**



POLITECNICO
MILANO 1863

DEPARTMENT OF AEROSPACE
SCIENCE AND TECHNOLOGY



POLI-Wind

windtunnel.polimi.it



Home About Facility Expertise Projects Publications Media room



Research Projects on display

Latest Project picture



Olimpic medalist Elia Viviani is back at Politecnico di Milano Wind Tunnel (GVPM)

Design for

creativity, technology
and sustainability for Design
education

STRADALE AL La.S.T. PER IL PROGETTO PES - PREVENIRE EDUCARE SENSIBILIZZARE

29/10/2024



SKYWARD

23/10/2024



LAUREA MAGISTRALE DELL'ASSOCIAZIONE ARMA AERONAUTICA

21/10/2024



EVENTS

ASTRONAUTS IN THE CLASSROOM @POLIMI

18/10/2024



EVENTS

POLITECNICO DI MILANO BACK TO DEEP-SPACE WITH HERA MISSION TO STUDY THE ASTEROIDE DIDYMOS

08/10/2024



PolIMI-DAER:

- Web Magazine: Conferences, Education, Events, Research, Etc..
- Social channels



Contacts
alessandro.croce@polimi.it
02 23998322

Teaching profile [?]
Publications [?]
Orcid [?]

Scientific Disciplinary Sector
FLIGHT MECHANICS

Croce Alessandro

Associate Professor

I'm Associate Professor of Flight Mechanics at the Department of Aerospace Science and Technology of the Politecnico di Milano since 2015.
I have been proudly working in the renewable energy sector for more than 20 years.

My research topics are in the area of multibody aero-servo-hydro-elastic Multidisciplinary Analysis and Design Optimization with applications to wind turbine holistic design, flight mechanics, wind tunnel testing and airborne wind energy flight mechanics and design. On these topics, I have co-authored about 140 publications in peer-reviewed international journal papers, book chapters and conference proceedings.

I represent Politecnico di Milano within the *European Academy of Wind Energy* (EAWE, <https://www.eawe.eu/>), I'm associate editor of the *Wind Energy Science* journal (<https://www.wind-energy-science.net/>) and I'm coordinating the POLI-Wind Laboratory (the wind energy laboratory within the Aerospace Department).

In 2018 I was proudly Chairman of the International Conference *The Science of Making Torque from Wind* (TORQUE2018, <http://www.torque2018.org/>).

Research labs

POLI-Wind - Wind Energy Lab

[Group details →](#)

Research projects

HORIZON EUROPE | SUDOCO - Sustainable resilient data-enabled offshore wind farm and control co-design

[Project details →](#)

HORIZON EUROPE | TWEET-IE - Twin Wind tunnels for Energy and the Environment - Innovations and Excellence

[Project details →](#)

HORIZON EUROPE | MERIDIONAL - Multiscale modelling for wind farm design, performance assessment and loading

[Project details →](#)

H2020 | FLOWER - Floating Wind Energy Network

[Project details →](#)

PoliMI-DAER-Staff:

- Individual page for each staff member, links to laboratories, projects, etc.
- Intranet form to report research products and third mission (organization of events, projects, scientific publications, etc.)



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I represent Politecnico di Milano within the *European Academy of Wind* as associate editor of the *Wind Energy Science* journal (<https://www.wind-energy-science.org/>) coordinating the POLI-Wind Laboratory (the wind energy laboratory within the Department of Aerospace Science and Technology).

In 2018 I was proudly Chairman of the International Conference *The Science of Torque* (TORQUE2018, <http://www.torque2018.org/>).

Research labs

POLI-Wind - Wind Energy Lab

Research projects

HORIZON EUROPE I SUDOCO - Sustainable resilient data-enabled off-shore co-design

HORIZON EUROPE I TWEEET-IE - Twin Wind tunnels for Energy and the Environment - Innovations and Excellence

[Project details →](#)

HORIZON EUROPE I MERIDIONAL - Multiscale modelling for wind farm design, performance assessment and loading

[Project details →](#)

H2020 I FLOWER - Floating Wind Energy Network

[Project details →](#)

Coordinator
Alessandro Croce

Team
Carlo Emanuele Dionigi Riboldi
Stefano Cacciola
Kurtan Yilmazlar
Mariana Montenegro Montero
Matteo Bordignon
Lucrezia Calzoni

POLI-Wind - Wind Energy Lab



The POLI-Wind Laboratory conducts research in the area of wind energy, mainly in two focus areas: development of technologies for multidisciplinary design of on-shore and off-shore wind turbines and in the Airborne Wind Energy System (AWES).

In the first focus area, work is done looking at the various aspects involved in the holistic design of these complex machines: aerodynamics, structures, materials, control, aeroelasticity, hydrodynamics, and costs from a numerical (code development) and experimental (wind tunnel test) point of view.

In the latter area, the Lab started working to develop technologies for the conceptual design and flight mechanics (stability and dynamics) of AWES systems.

ONGOING ACTIVITIES

PoliMI-DAER-Staff:

- Individual page for each staff member, links to **laboratories**, projects, etc.
- Intranet form to report research products and third mission (organization of events, projects, scientific publications, etc.)



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Publications ▸
Orcid ▸

Scientific Disciplinary Sector
FLIGHT MECHANICS

Research projects

Scientific coordinator
Alessandro Croce

Stefano Cacciola
Lucrezia Calzoni

Department Role
partner

Project Scale
internazionale

Start
01/11/2022

End
31/10/2025

Status
In progress

HORIZON EUROPE I TWEET-IE - Twin Wind tunnels for Energy and the Environment - Innovations and Excellence

An upgrade for Athens' wind tunnel testing

There is a way to test how an object will move through the air or how the wind will interact with the object, without even leaving the laboratory. Researchers use huge tubes with air blowing through them. Such wind tunnels can test scale models of aircraft, wind turbines and even buildings. In this context, the EU-funded TWEET-IE project will upgrade the wind tunnel testing activities of the National Technical University of Athens (NTUA). The proposed upgrade will render the NTUA on par with other world-class facilities for hosting a variety of research applications in the field of external aerodynamics. The primary focus will be on clean-tech, energy and transport applications.

Objective

TWEET-IE aims to upgrade the Wind Tunnel (WT) testing activities of the widening member National Technical University of Athens (NTUA). The NTUA WT will be rendered on par with other world class facilities for hosting a variety of research applications in the field of external aerodynamics, primarily focusing on clean-tech, energy and transport applications. TWEET-IE is conceptually based on three distinct pillars i) enhancing administration and management capacity, ii) upgrading technical competence and iii) improving visibility and profile of the facility. It includes knowledge transfer and networking activities with 4 leading European universities, which have all been successfully operating their own large WTs for decades and have remarkable scientific and research track records. Renewable energy sources, clean-tech and energy efficiency in the urban environment will be the cornerstones for accomplishing EU's energy and climate ambition to render Europe the first energy neutral continent by 2050 and WT experiments are indispensable for analyzing issues related to wind energy and environmental flows. This is one reason that upgrading the in-house WT has been prioritized as a research goal of paramount importance for both the School of Mechanical Engineering, NTUA and the labs involved in the WT management and operations.

TWEET-IE's primary goals will be achieved through systematic work and seamless communication between project working groups, comprising key personnel from all partners, and a series of networking, training and research activities and events, in which all leading members of the consortium play an equally important role.

TWEET-IE's strategic research goal is to address the challenge of measurement conformity among different WT. Four identical state-of-the-art test campaigns will be repeated in different tunnels, serving the strategic goal, the improvement of NTUA's technical capacity and also stimulating research innovation and excellence per se.

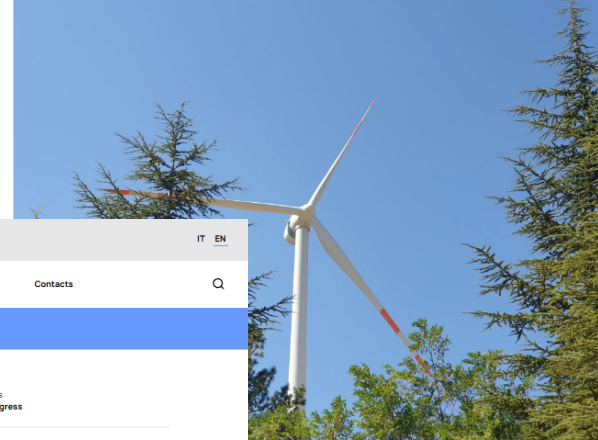
More info: <https://cordis.europa.eu/project/id/101079125>

Research labs

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POLI-Wind - Wind Energy Lab



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PolIMI-DAEF

- Individual
- Intranet for projects, s

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Publications ▸
Orcid ▸

Scientific Disciplinary Sector
FLIGHT MECHANICS

Research projects

Scientific coordinator
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Stefano Cacciola
Lucrezia Calzoni

Department Role
partner

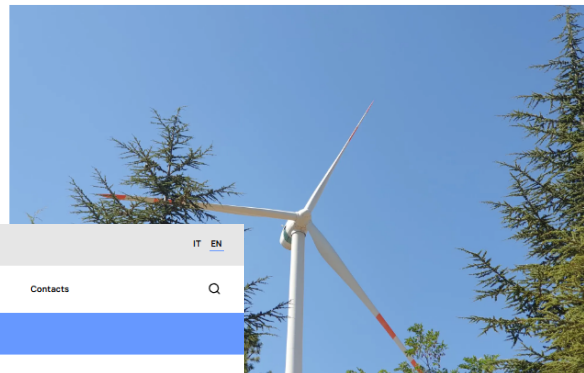
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POLI-Wind - Wind Energy Lab



Start
01/11/2022

DIPARTIMENTO DI SCIENZE
E TECNOLOGIE AEROSPAZIALI

About us ▾ Education ▾ Research ▾ Collaborate ▾ People ▾ Magazine ▾ Contacts

HOT
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Env
Exc

06/11/2022

ALESSANDRO CROCE, KEYNOTE SPEAKER AT ENCIT2022

19TH EDITION OF THE BRAZILIAN CONGRESS OF THERMAL
SCIENCES AND ENGINEERING

An upgrade
There is a
even leaving
scale model
upgrade the
upgrade the
the field of

Objective
TWEET-IE
University
variety of
transport &
management
includes key
successful
Renewable
accomplish
experiment
reason that
the School
TWEET-IE's
working group
activities at
TWEET-IE's
Four identified
improvements

More info:

PolIMI-DAEF

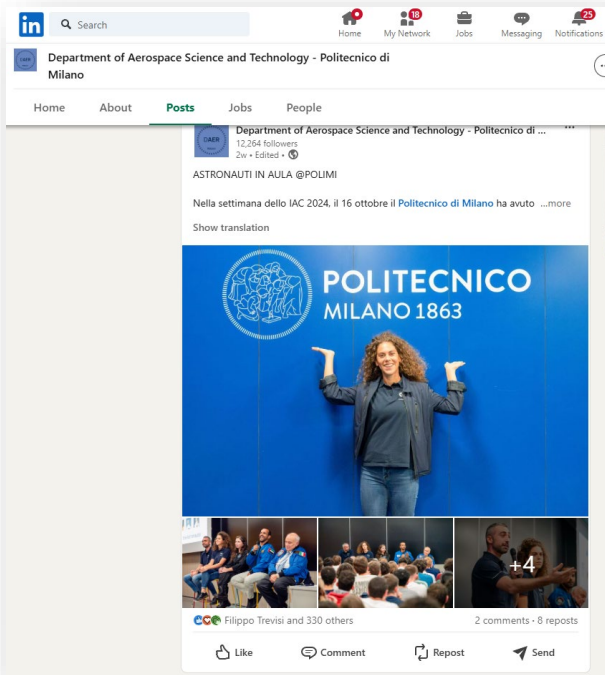
- Individual
- Intranet for projects, s

After the 2020 edition, unfortunately completely online, finally **Prof. Alessandro Croce**, was able to attend in person, for the second time as Keynote Speaker, at the **19th edition of the Brazilian Congress of Thermal Sciences and Engineering (ENCIT2022)** held in Bento Gonçalves - RS - Brazil, in November 2022.

Alessandro had the opportunity to present, in front of a great and new audience, his research activities with a lecture entitled **"Energy from the Wind: Land-Based but also Flying Wind Turbines"**.

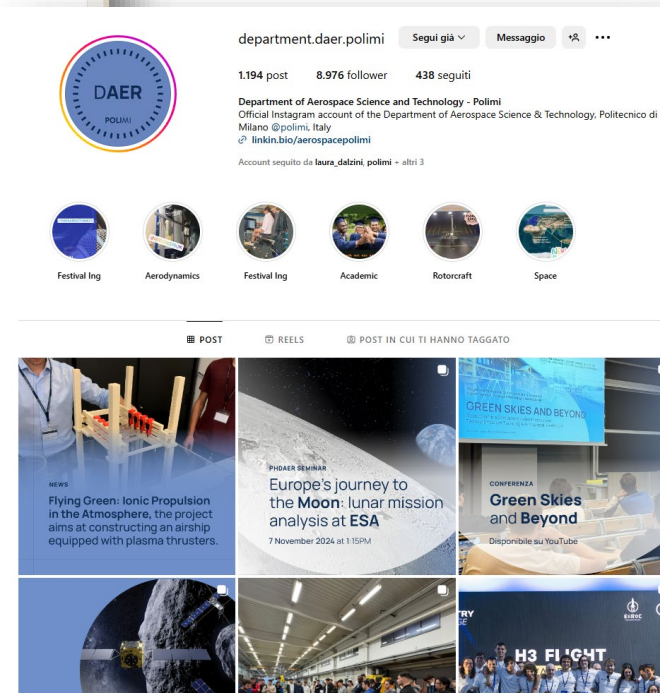
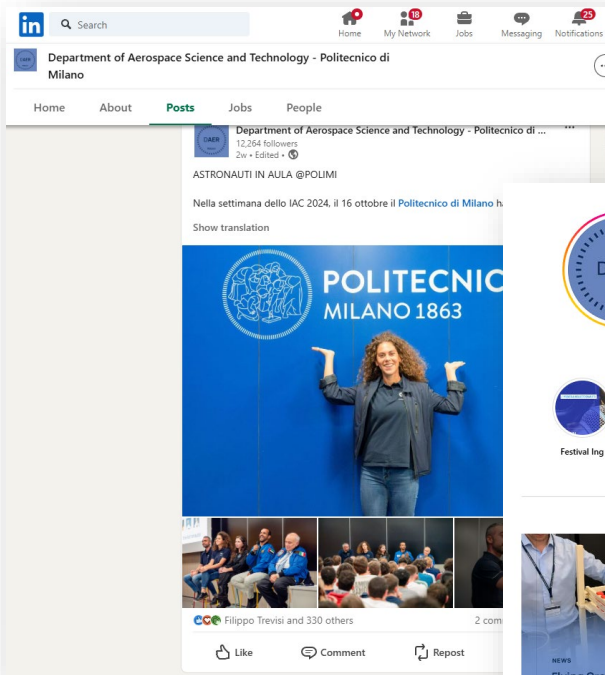
POLI-Wind

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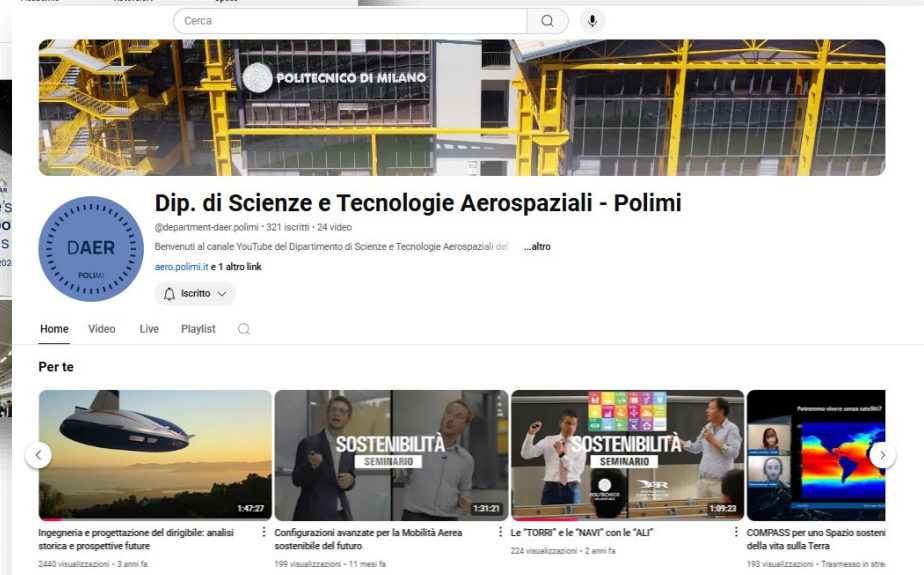
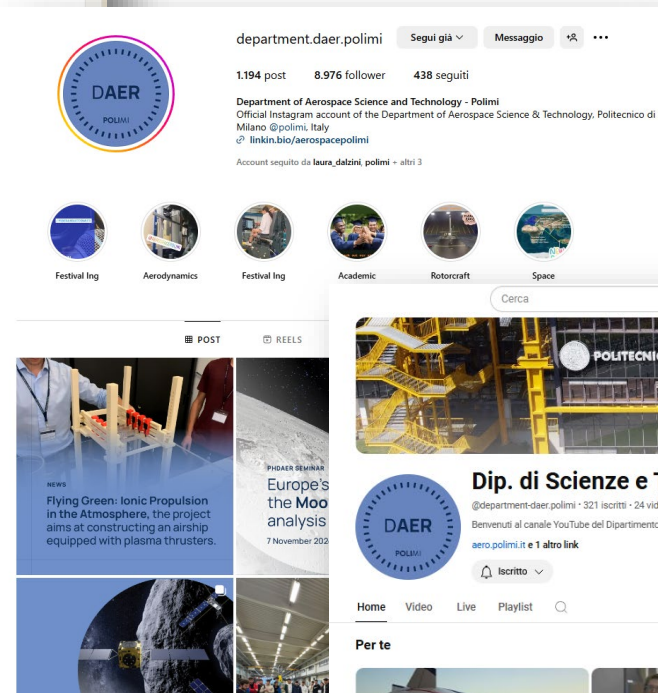
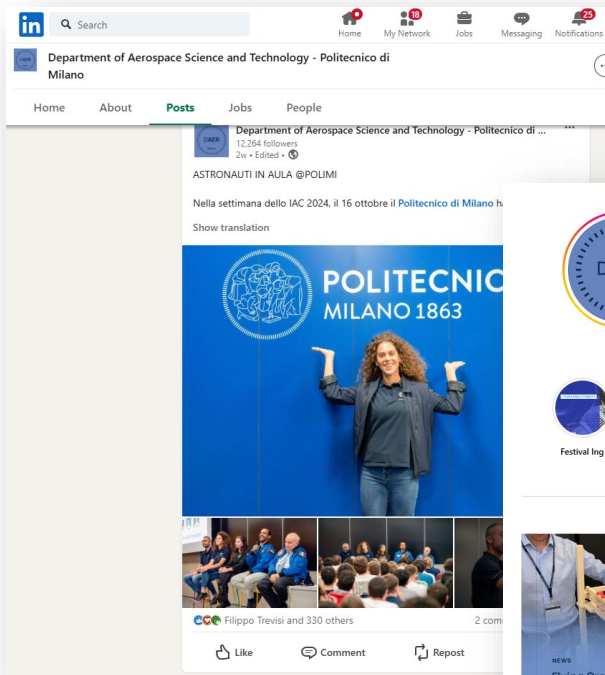
PoliMI-DAER-Social channels:

- Connected with the web magazine
- Used to reach different audiences



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- Used to reach different audiences

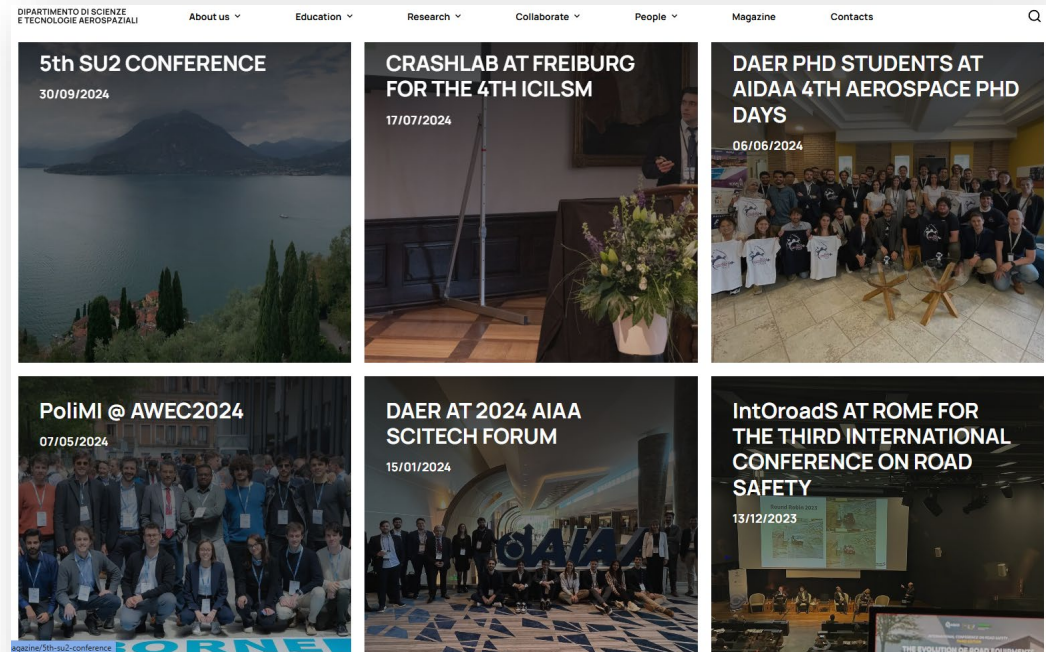


PoliMI-DAER-Social channels:

- Connected with the web magazine
- Used to reach different audiences

Communication group - Activities

- Event/seminar/conference organization support
- Publication-Third mission database
- DAER website
- Social channels
- Graphics, photos, video and web
- Other support services



Communication group

- Third mission database

Year	# events
2023 (*)	27
2022	41
2021	35
2020	16
2019	38
2018	11

(* update November 2023)



Communication group

- Social channels number (*)

TWITTER (1/8/2015)

< 2018	2019	2020	2021	2022	06-ott-23	TWITTER
TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	
Tweets	Tweets	Tweets	Tweets	Tweets	Tweets	Tweets
1382	240	174	169	174	167	2306
New followers	New followers	New followers	New followers	New followers	New followers	Followers
1056	329	244	206	247	75	2157

INSTAGRAM (22.3.2018)

2018	2019	2020	2021	2022	06-ott-23	INSTAGRAM
TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	
Posts	Posts	Posts	Posts	Posts	Posts	Posts
149	177	119	157	231	153	986
New followers	New followers	New followers	New followers	New followers	New followers	Followers
811	892	446	883	2779	2909	8720

LINKEDIN (5.6.2019)

2019	2020	2021	2022	06-ott-23	LINKEDIN
TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	
Posts	Posts	Posts	Posts	Posts	Posts
57	78	111	239	149	634
New followers	New followers	New followers	New followers	New followers	Followers
1607	2508	1488	3204	1416	10223

YOUTUBE (11.10.2017)

< 2018	2019	2020	2021	2022	09-ott-23	YOUTUBE
TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	TOTALI	
New followers	New followers	New followers	New followers	New followers	New followers	Followers
60	35	50	70	45	27	287
New views	New views	New views	New views	New views	New views	Views
519	609	1617	3480	2965	4773	13444

(* update November 2023)

Thank you for your attention!

Questions?