

## Next Generation Integrated Sensing and Analytical System for Monitoring and Assessing Radiofrequency Electromagnetic Field Exposure and Health

### 6th Plenary Meeting NextGEM partners gather in Delft

The 6th NextGEM Plenary Meeting gathered the project partners in Delft, the Netherlands, from October 8 to 10. The Dutch partners hosted the meeting: The [Technical University of Delft \(TUD\)](#), The [Hague University of Applied Sciences \(THUAS\)](#), the [Dutch National Institute for Public Health and the Environment \(RIVM\)](#), and the [Dutch Authority for Digital Infrastructure \(RDI\)](#).

These conferences are held twice a year at one partner's venue and serve to coordinate the consortium's lines of work and steer its future.

During three days, all the Work Packages of the project were overseen: from NextGEM's overarching goals, coordination, communication, dissemination, and exploitation to the three case studies the project is conducting, taking care of all the lines of research of NextGEM and the NIKH, the website which will aggregate all the project's results.

Apart from the Plenary Meeting itself, the partners visited the KET laboratories in THUAS' facilities, as well as the XG-lab and the Green Village, both in TUD's Campus.

The next Plenary Meeting will be in Nicosia, Cyprus, held by the Cypriot partners [eBos Technologies](#) and [Sphynx Analytics](#).



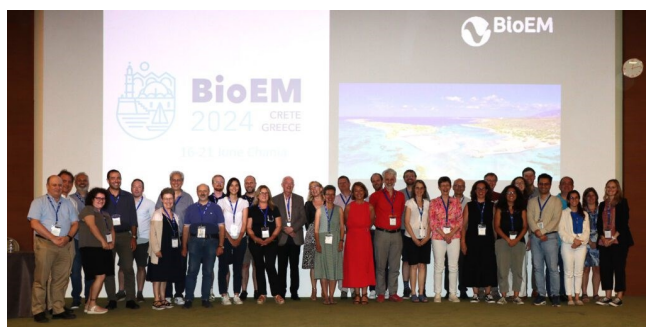
## News

### Strong presence of NextGEM in the BioEM 2024

NextGEM leaders FORTH-ICS hosted the 3rd annual conference of BioEM in Chania (Greece). Worldwide EMF experts attended BioEM 2024 and participated from June 16th to 21st. The BioEM society organises the conference yearly.

6 NextGEM-related posters were showcased, and one of them was awarded the First Prize Student Poster Award, given to Seppe Segers ([Sciensano](#)).

Dr Mariateresa Allocca & Dr Anna Sannino (CNR) made one oral presentation each during the event, and THUAS took part in three more investigations presented by non-NextGEM partners. Dr Nikolaos Petroulakis (FORTH), Prof Mats-Olof Mattsson & Prof Myrtil Simko (SPi) and Dr Sam Aerts & Prof John Bolte (THUAS) presented during the event's workshops, too.



### CLUE-H partners presented their work at BioEM

The 3<sup>rd</sup> CLUE-H annual meeting took place during the Conference, too, and it counted with the participation of various members of NextGEM. NextGEM, along with three other EU-funded projects ([SeaWave](#), [GOLIAT](#), and [ETAİN](#)), is part of the [European Research Cluster on EMF and Health \(CLUE-H\)](#). This network of over 70 organisations expects to fill the knowledge gaps that exist regarding the impact of wireless technologies on health and the environment.

### Discovering three biological studies to assess possible EMF effects

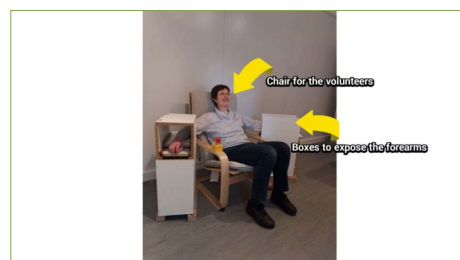
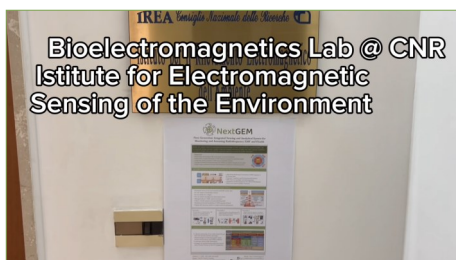
Three NextGEM partners explained their research on the exposure to EMF in three videos uploaded to our [YouTube channel](#).

Spanish partners [ICMAB-CSIC](#) showed us how they work with the nematode *C. elegans* and why they are useful to assess the biological effects of EMF. These tiny worms can be used as a first step to screen and evaluate materials, drugs and EMF to try to elucidate human-scale repercussions.

In Naples, Italy, the [Institute for Electromagnetic Sensing of the Environment](#) of the National Research Council of Italy (IREA-CNR) presented us the Bioelectromagnetics Laboratory. This lab is fully equipped for carrying out experiments on human cell cultures and exploring the effects on cancer-related endpoints due to RF exposure in different frequency ranges.

[Sciensano](#) (Belgium) showed us the premises of the [Belgian Scientific Institute of Public Service \(ISSeP\)](#). There, they house an exposure system for EMF-effects tests on humans. Sciensano and ISSeP will undertake short acute exposures to 26.5 GHz on healthy volunteers and investigate whether the controlled exposure affects various parameters in red blood cells.

If you want to see those videos, click on the images below or visit our [YouTube channel](#).





## Publications

Korkmaz, E., Aerts, S., Coesoij, R., Bhatt, C.R., Velghe, M., Colussi, L., Land, D., Petroulakis, N., Spirito, M., Bolte, J. **A comprehensive review of 5G NR RF-EMF exposure assessment technologies: fundamentals, advancements, challenges, niches, and implications.** Environ Res. 2024 Nov 1;260:119524.

Korkmaz, E., Littel, S., Bolte, J. (2022). **Development of a low cost sensor network for measurement of 5G signals in the Netherlands.** BioEM 2022, the 1st Annual Meeting of BioEM Society, Proceedings.

Velghe, M., Pruppers, M., Aerts, S., Korkmaz, E., Gavrielides, A., Zeni, O., ... & Bolte, J. (2023). **NextGEM Practical Guidelines for RF-EMF exposure awareness and preventive actions: goals, definitions, and procedure.** 2023 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting, Sapporo, Japan, 19 – 26 August 2023.

Littel, S., Korkmaz, E., Bolte, J., & Spirito, M. (2023). **A Testbench Driven FR2 EMF Sensor Development and Validation.** In Proceedings of BioEM 2023, Oxford, UK, 18–23 June 2023.

Chirico, G., Jane 'DSilva, C., Pinchera, D. & Schettino, F. (2024). **Analysis of the Contribution of Different Generations of Cellular Communication Systems to the EMF Levels in a Small City.** 2024 IEEE International Symposium on Measurements & Networking (M&N), Rome, Italy, 2024, pp. 1-5.

Pinchera, D., Migliore, M. D. & Schettino F. (2024). **A Simple Closed-Form Model for the Pattern of Commercial Massive MIMO Antennas.** 2024 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting (AP-S/INC-USNC-URSI), Firenze, Italy, 2024, pp. 2101-2102.

Aerts, S., Wiart J., & Bolte, J. (2024). **Combining Advanced Tools to Monitor RF-EMF Exposure in Next-Generation Telecommunication Networks.** 2024 IEEE INC-USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), Florence, Italy, 2024, pp. 178-178.

Borges, T., Panagiotakos, D., Proykova, A., Samaras, T., Scott, M., Dasenbrock, C., Danker-Hopfe, H. & Zeni, O. (2023). **Opinion on the need of a revision of the annexes in Council Recommendation 1999/519/EC and Directive 2013/35/EU, in view of the latest scientific evidence available with regard to radiofrequency (100kHz – 300GHz), adopted by written procedure on 16 August 2022.** SCHEER (Scientific Committee on Health, Environmental and Emerging Risks).

## Public deliverables

Deliverable 1.12 - **Cluster web portal and visual identity**, May 2024.

Deliverable 1.18 - **Stakeholder list**, February 2024.

Deliverable 1.13 - **Cluster brochure**, August 2023.

Deliverable 1.19 - **Cluster newsletter**, March 2024.



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