CEI UAM+CSIC Executive Summary

Leading the social, cultural and economic development of Madrid North

Contents

1. EXECUTIVE SUMMARY

1.1 Presentation

T**he UAM (Autonomous University of Madrid)** employs some 2,500 teaching staff and has a roll of 34,000 students. It has a very strong research activity and is one of the best-placed Spanish universities in international rankings.

The CSIC (Spanish National Research Council) is Spain's most important research body and, according to the SCImago Ranking, the eleventh best research institution in the world. The UAM's campus hosts four CSIC institutes and five mixed UAM+CSIC institutes, with a research staff of more than 2,000.

The UAM's Cantoblanco and Medical Campuses, which host the UAM+CSIC International Campus of Excellence (Campus de Excelencia Internacional, CEI), are located at the centre of a large, well-developed interurban area that offers well-being, good quality of life, excellent transport links and a privileged natural environment.

1.2 Research at the CEI UAM+CSIC

Besides its large teaching offer, the UAM undertakes important scientific activities in the areas of Legal and Social Sciences, Economic Sciences and Business Studies, Humanities, Education, Psychology, Science, Chemistry and Chemical Technology as well as Earth and Environmental Sciences, Computer Sciences and Telecommunications.

Moreover, the UAM+CSIC Campus hosts a large number of top scientists from both institutions that carry out highly competitive research in several areas, three of which can be considered world–class. These areas, whose activity within the CEI program has been endorsed by the Nobel prize-winners in Physics Sheldon Glashow and Martinus Veltman, in Chemistry John Walker and the Fields medalist Charles Fefferman, are briefly described next.

Nanoscience and Advanced Materials

Out of the 60 groups belonging to Nanospain, the Spanish open network of nanoscience and nanotechnology, 41 are located at or near the UAM+CSIC Campus. Moreover, 9 of the 20 most relevant condensed matter physicists in Spain (H index above 32) belong to the institutions aggregated in the CEI proposal.

Biology and Biomedicine

The UAM+CSIC Campus hosts the largest scientific community in Spain (and one of the largest in Europe) devoted to Biology, Biomedicine and Biotechnology, whose work has a clear impact on the international community. It generates more scientific publications than any other research site in Spain, and a significant number of its scientists are among the top leaders in their specific field (top national H index).

Theoretical Physics and Mathematics

The UAM+CSIC CEI Theoretical Physics (UAM's Department of Theoretical Physics and CSIC's Institute of Theoretical Physics) and Mathematics groups (UAM's Department of Mathematics and CSIC's Institute of Mathematical Sciences) are research leaders in Spain and boast high-level international renown with a quality similar to most of the reference research centres in

Europe and the US and with an outstanding H index. Both UAM departments have been identified as excellent in teaching in Europe by the Centre for Higher Education Development.

1.3 Objectives

The Cantoblanco Campus, where the UAM and CSIC are located, was opened in the north of Madrid in 1968, separated from the capital and isolated from its social/urban surroundings, whose development level was relatively low at the time.

Over time, this situation has changed gradually. Now, **the UAM and CSIC are joining forces with other agents in the CEI project to develop the campus and turn it into a true University City. Moreover, through its integration in a currently more cohesive geographical surrounding, which, thanks to urban growth, is now far closer to the campus, this new project will play a decisive leadership role in the areas of education, society, culture and the economy of northern Madrid.**

The aggregation of the UAM and CSIC in the International Campus of Excellence, along with that of other research and transfer centres, companies, business organisations, local authorities and Madrid's regional authorities, will give significant impetus to improve the Campus' teaching, research and knowledge transfer capacities.

For this to be so, the UAM+CSIC CEI project is centred on the development of six large action areas:

1. **Strengthening strategic research areas and increasing their international visibility.**
2. **Improving the quality of teaching and adapting it to the undergraduate and graduate EHEA.**
3. **Attracting international talent.**
4. **Development of a strong transfer network.**
5. **Transforming the campus into a true University City.**
6. **Creating a territorial Campus.**

To achieve these objectives, a wide range of actions has been planned up to 2012 in most cases and up to 2015 in a few ones. These actions, expected results and quantitative goals are shown in a table below.

The project's main consequences and, in fact, ultimate goals are two:

- To increase the international relevance of the CEI UAM+CSIC, **seeking that the CEI UAM+CSIC be the leading Spanish campus by 2015 and among the 100 top universities in the world and top 50 in Europe.**
- To integrate it very closely with its surroundings, **in order to lead the social, cultural and economic development of Madrid North**

1.4 Aggregations

Three levels of aggregations are under consideration. **The first, which has a research/academic nature**, would integrate:

- UAM's different research departments and institutes.

- CSIC institutes in the campus.
- IMDEAs (Madrid Institutes for Advanced Studies) for Nanoscience, Food and Social Sciences.
- Centros Nacionales de Investigaciones Oncológicas (CNIO) and Investigaciones Cardiovasculares (CNIC) and the Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT).

All this aims at achieving a substantial increase in research capacity and efficiency, as well as setting a joint definition, decision and execution framework for science policies.

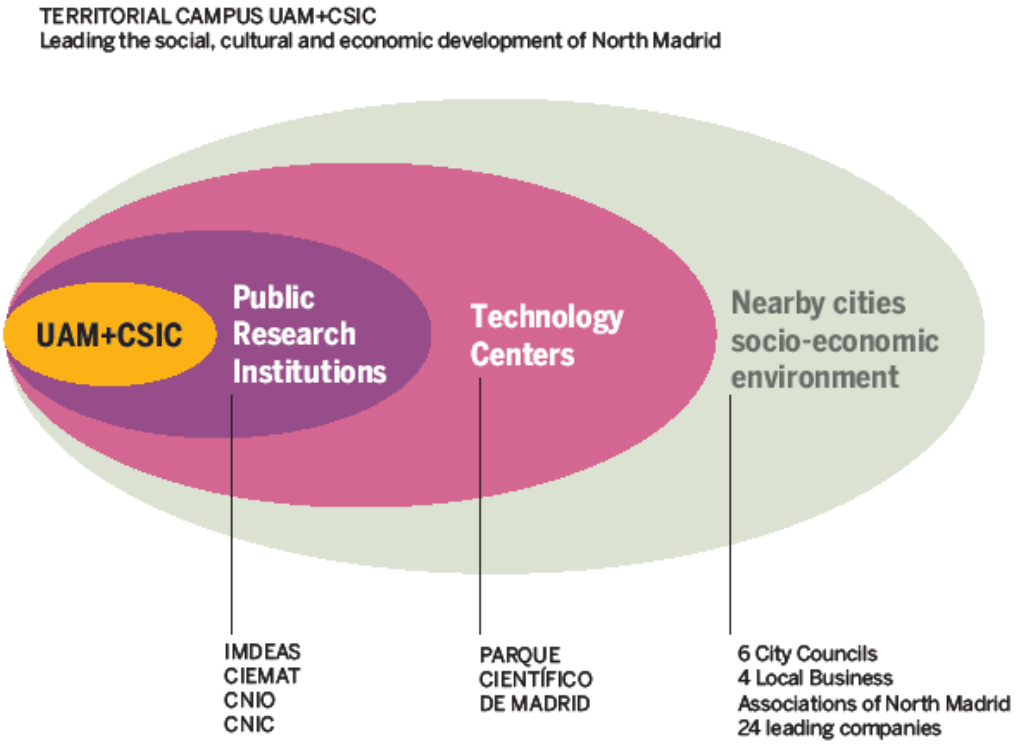
The second level focuses on knowledge transfer and seeks to add new impetus to the contributions of researchers and technological experts, as well as to promote the finding of solutions to the needs of local companies as well of those from further afield. In addition to the UAM and CSIC, the most important stakeholders here are:

- The Parque Científico de Madrid (PCM), a leader among Spanish science parks.
- Local business associations, AICA,FEMAN, ASEYACOVY and ACENOMA.
- Large companies with which a wide-ranging cooperation has already been established, particularly on the endowment of Company Chairs.

Finally, **in a third level of a much closer integration with its social and economic environment,** there is an already active aggregation between the Campus and the local authorities of Madrid, Tres Cantos, Alcobendas, San Sebastián de los Reyes, Colmenar Viejo, Miraflores de la Sierra, and other institutions of its nearby cities.

Two mechanisms are planned to manage these aggregations:

- **A UAM+CSIC CEI Consortium** to provide coordinated management for the physical elements of the campus.
- **A second body, whose legal personality still has to be decided**, in charge of defining and executing those transversal actions set out in the Plan, which, due to their specificity, require independent decision-making.



Aggregations diagram

1.5 Actions, expected results and outcome measures

ASPECTS	STRATEGY	ACTIONS	EXPECTED RESULTS	OUTCOME MEASURES
1. **Teaching Improvement**	- Guarantee the quality of courses - Internationalise under- and graduate degrees - Enlarge the structures of teaching support	- Quality assurance system - Tutorial action plan - Attraction of foreign students	- Increase demand - Improve academic efficiency and student employability - Increase the number of international students - New settings for innovative teaching and learning	- Average grade at university entrance exam: 7 - International students in postgraduate studies: 20% of total - Students that have mentors: 100% - Drop-out/efficiency rates: improvement of 20% - Double the number of Long Life Learning courses - Employability: 90% of students employed after 1 year
2. **Scientific improvement**	- Support and strengthen the joint research axes while seeking international excellence - Improve the quality and competitiveness of the remaining research, with a clear commitment to transversality and internationalisation	- Aggregation of research centres and groups to increase critical mass - CEI specific plan to attract international talent - New scientific/technological research platforms - New interdisciplinar research centres	- International excellence and prestige of joint axes - Hiring of first-class international scientists - Improvement in the number and quality of international publications in all areas	- Hiring of 10 internationally excellent researchers - 10% annual increase in the hiring of researchers for the Ramón y Cajal programme - 10% increase in scientific production - 10% increase in quality scientific production - Double the number of articles in first-class multidisciplinary publications - 5-10 internationally high-quality postgraduate and doctorate degrees
3. **Transformation of the campus**	- Progress towards the University City	- Take advantage of outside spaces to turn them into teaching spaces - Construction of the Plaza Mayor (Main Square) - Renewable energy generation facilities - Strengthen the e-campus	- More liveable university city with appropriate services - Environmental quality and sustainable development - ICT e-administration and global campus	- 20,000 m^2 of additional space for services for the university community - 10% increase in the number of trees on campus - Collection of irrigation water: 100% - Photovoltaic energy generated: 1,000 MW power - Sustainable transport – percentage use of public transport: 70%

ASPECTS	STRATEGY	ACTIONS	EXPECTED RESULTS	OUTCOME MEASURES
4. **Introduction and adaptation to EHEA**	- EHEA-adapted degrees - Construction and adaptation to EHEA of teaching spaces - Internationalisation of students and teaching staff	- Didactic campus - Aula 2015 programme - Continuous training and employability - International promotion and welcome centre	- Renewal of the teaching/learning model - Outside teaching spaces - Renovated classrooms - Complete range of assistance for foreign students and researchers	- 100% of classrooms adapted to EHEA - Promotion and 100% reception of foreign students
5. **Knowledge transfer and innovation**	- Development of a strong transfer network	- Support and strengthen entrepreneurial culture - Centre for laboratories supporting R&D - New business incubator spaces - Support innovation in SMEs in cooperation with business organisations in northern Madrid	- Integration of the activities of the different stakeholders in the transfer network - Extension and deepening of business cooperation - Lead social, cultural and economic development in northern Madrid	- 10% increase in the number of patents - 10% annual increase in the creation of technology-based businesses - 10% annual increase in R&D and consultancy contracts - 80% increase in m^2 dedicated to business incubators - 10% increase in m^2 dedicated to advanced R&D&i services
6. **Integration between campus and surrounding area**	- Turn the UAM+CSIC Campus into a regional campus for northern Madrid	- Aggregation of all the stakeholders in the regional campus - Integration of knowledge and research in the campus' areas (nano/bio/info/cogno) - Physical and social integration - Institutional integration	- Extension of the current teacher/researcher network with the inclusion of new centres - University accommodation and residence halls - Cultural programmes - Shared services and infrastructure - Sustainable connectivity - Urban consortium - Independent body to manage CEI programmes	- Creation of urban consortium - Creation of legal entity to manage CEI programmes - 40% increase in places at university residence halls - Bike lanes connecting the campus with half of the surrounding towns - 10% increase in summer courses - 10% increase in cultural activities - Shared services and infrastructure