STRATEGIC PLAN

22
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EXECUTIVE SUMMARY

This document sets out the Strategic Plan of the Aragon Engineering Research Institute (I3A) for 2022-2025.

Developing the plan has included in-depth strategic thinking with the aim of setting the institute's strategic focuses and core areas, defining the specific actions that help ensure these areas are fulfilled.

The plan has focused on reviewing which activities are carried out in I3A, what its needs are in terms of developing these activities, and how what I3A does is communicated both internally and externally.

The strategic reflection includes a broad participation process that counted on a survey of the different components of I3A, interviews, and working groups with the institute's internal and external staff, along with significant involvement of the management team, which has held several working meetings to define proposals and validate the steps taken. The selected actions have also been developed in depth, following the prioritisations established during previous activities. Section 1.2 and the Annexes in this document include further details on the participation process.

Chapter 2 includes a reflection on the environment and current situation of I3A, as carried out through a SWOT analysis. Chapter 3 includes the general visual structure of the plan, as developed in subsequent chapters.

The redefinition of the mission and vision includes a greater focus on promoting research and collaboration with the science and technology ecosystem with a view to becoming a leading R&D&I engineering centre at national and international level.

The three strategic focuses: What do we do? How do we do it? and How do we convey it? have all been developed through 8 strategic core areas and 25 specific actions. The proposed actions by core area and focus can be seen in Chapter 6 and the development of the actions in Chapter 7, based on data sheets with their definitions and persons in charge, specific actions with their scheduling, and the monitoring indicators and results.

We hope this new Strategic Plan structure will help meet I3A's goals and develop the institute's capacities, its relationship with other organisations and companies, and its visibility. The proposal includes an evaluation at the end of the plan in order to analyse both degree of compliance and effectiveness, and to improve strategic planning for subsequent periods based on the results obtained.

1. BACKGROUND AND GOALS

Aragon Engineering Research Institute (I3A) is the first university institute set up by University of Zaragoza and counts on significant research capacity, including a large part of the university groups at the School of Engineering and Architecture (EINA), together with other groups from the Science, Business and Economics, and Veterinary Schools. I3A has 33 research groups and more than 500 professionals, of whom 272 are permanent members with PhDs, and the rest are researchers, hired staff and technical staff.
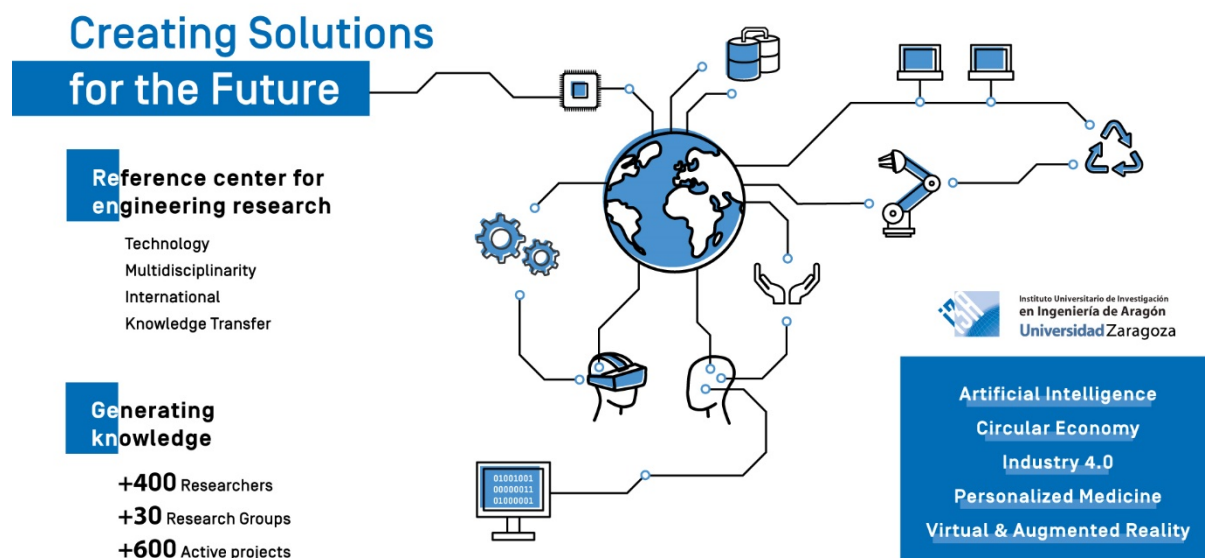
The Institute's goals are:

- ✓ Promote high-quality focused research, from basic research through to prototype design.
- ✓ Promote technological innovation initiatives.
- ✓ Sustained collaboration with the business sphere.
- ✓ Generate and transfer knowledge to society.

In 2017-2020, I3A defined a Strategic Plan that basically involved an internal reflection on the situation of the Institute, setting out the priority areas I3A would focus on during this period on a general level. The strategic plan established 5 strategic core areas: Core Area 1: people. Core area 2: Generate knowledge. Core area 3: Generate new technologies and transfer them to the economic and social environment. Core area 4: Collaboration. Core Area 5: Strengthen and improve the structure. These five core areas are grouped together 25 generally defined key actions.

Once the plan's action period has ended, I3A aims to develop a new Strategic Plan for 2022-2025 that will deal with the reflection processes and the development of the core areas, actions and interventions in more depth. It also includes the need to establish indicators to monitor and evaluate compliance with the actions included in the plan at the end of the period.

Applying a participation methodology that counts on the opinion of all people and organisations involved with I3A is considered a key part of the reflection process when defining the Strategic Plan. The participation process has therefore included all I3A research groups and their researchers and support staff, as well as a representation of the main agents of the R&D&I and productive ecosystem of Aragon.

1.1.   Goals in drafting the Plan

The general goals in developing the Strategic Plan are:

- ✓ Analyse the capacities, positioning and opportunities of I3A, including them in a SWOT analysis.
- ✓ Redefine I3A's mission and vision for 2022-2025.
- ✓ Define the main Strategic Focuses and Core Areas to be included in the Plan.
- ✓ Specify the actions to be carried out in each strategic core area.
- ✓ Determine the performance indicators, setting yearly goals (where applicable) and goals for 2025.
- ✓ Propose a Monitoring and Evaluation System for the Strategic Plan.

1.2.   Methodological proposal

A methodological and operational model has been implemented in order to develop the Plan, carrying out a large participation process which, in addition to the internal work developed by the I3A management team and the consultancy team, included the following activities:

- **Personal interviews** with the representatives of organisations and companies involved in developing the Plan, and who are considered especially important in defining some aspects of it.
- **Surveys** for the research groups and people forming part of them.
- **Workshops** that allow debates between attendees and the enrichment of individual ideas.

- **Contrast tables** between the consultancy and I3A management teams on the different steps, and for decision-making in each of them.
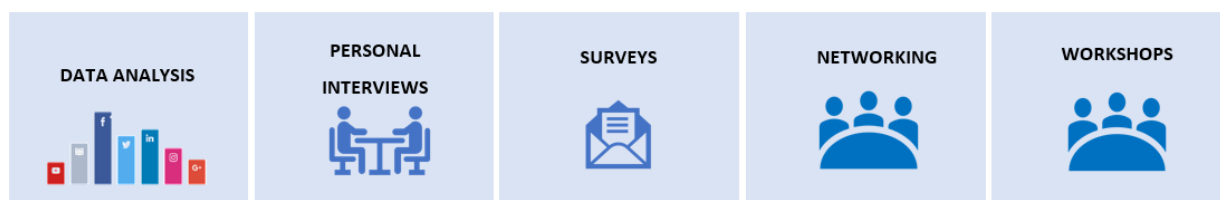
Annex I provides details of the participation process carried out. **Annex II** includes the survey form sent to those taking part in the participation process.

2. ANALYSIS OF THE CURRENT SITUATION AND ENVIRONMENT OF I3A. SWOT ANALYSIS

The SWOT analysis is the simplest and most effective method to decide on future strategies, since it helps propose actions that should be implemented in order to take advantage of the opportunities detected and to prepare the sector against any threats, ensuring awareness of its different strengths and weaknesses.

The SWOT analysis has been defined and evaluated during the participation process. The results of this analysis are shown below:

WEAKNESSES
➢ Little collaboration between I3A groups
➢ Need for more financial and human resources in I3A (both researchers and technical and support staff) that allow it to offer a more efficient, quality service
➢ Little room for manoeuvre in terms of science policy and in-house staff
➢ Need for more explicit institutional support in support of research
➢ Weak external image of I3A. The institute is little known nationally/internationally
➢ Professionals perceive that the institute lacks a clear strategy and plan that define the institution's goals and actions over the next few years
➢ Need to improve management of the economic and human resources of I3A
➢ Mismatch between the measurement parameters of the research results and the reality of research

➢ Number of patents, publications, projects, etc., highly unequal between groups, and improvement factor for the other groups
➢ Improve the management and information procedures that allow adequate follow-up of the research activity carried out

THREATS
➢ Precarious conditions of access to research for young staff, which leads to the continuous ageing of research staff
➢ Little investment by Aragon Regional Government in R&D compared to investment in other nearby Regions
➢ Current economic situation that could lead to a cut in the budgets for basic research
➢ Difficulty in combining research with other activities of teaching staff
➢ Lack of a firm commitment from the University and Aragon Regional Government to promoting the Institutes
➢ Little explicit recognition of research activity within University of Zaragoza
➢ Little collaboration with private organisations and research patronage organisations
➢ Strong competition in attracting economic resources from public funding
➢ Lack of long-term strategic vision in supporting R&D&I
➢ Absence of large leading Spanish companies in R&D
➢ Existence of other institutes in this field with more visibility than I3A, whether at regional or national level

STRENGTHS
➢ Multidisciplinary composition and size of the institute (33 research groups, more than 500 researchers)
➢ There are adequate research support services (economic and administrative management, dissemination and communication, computer services, microcomputing technical assistance service, web services, etc.).
➢ Ability to bring together research from different areas related to engineering
➢ Scientific quality. Number of publications and impact factor
➢ Participation by I3A researchers in European projects, giving the institute an international vision

➢ Research initiation programmes for students
➢ Sustained growth since its creation, gaining visibility as a leading institute in the fields it works in
➢ Good relationship and collaboration with the business sector
➢ Success in obtaining funds from competitive calls
➢ Ultramodern laboratory project in I3A for cross-cutting research lines
➢ Existence of coordinators in the Institute's four areas, favouring coordination between the different research groups

OPPORTUNITIES
➢ International macrotrends in R&D that include, above all, the four areas where I3A carries out its activities
➢ Improve society's interest in developing science and technology, improving its standing and the need for investment
➢ There is a perceived greater interest in supporting research, especially in the biomedical and digital transformation field, due to the current circumstances caused by the Covid-19 health emergency
➢ New funding opportunities at European level with the launch of the *Next Generation* Instrument
➢ New opportunities in the field of innovation and technology transfer not explored by I3A
➢ Increase in the number of Spanish SMEs that initiate innovation activities and that can be supported by research institutes
➢ Create innovation networks at international level, especially in the fields of biomedical research and ICT
➢ Being part of University of Zaragoza and proximity to other university institutes and research centres with whom to seek synergies for new developments

3. GENERAL STRUCTURE OF THE STRATEGIC PLAN

The structure of the Strategic Plan is based on the definition of I3A's mission and vision. The main focuses are then analysed, along with the strategic core areas included in each focus. Specific activities and measures/actions to be applied will also be defined for each of the core areas. These activities must be monitored during the course of the Plan in order to analyse how much the goals are met.

The general structure of the Strategic Plan is shown in the following figure:

Image: Structure of the Strategic Plan

4. MISSION, VISION AND STRATEGIC FOCUSES OF I3A

MISSION

Promote basic focused research, together with technological innovation initiatives through collaboration with the science and technology ecosystem, including businesses; as well as training for researchers and technologists.

VISION

Be a leading centre in R&D&I and engineering at national and international level, notable for being at the forefront of technology, thanks to developing multidisciplinary transnational projects.

STRATEGIC FOCUS

The Strategic Plan is structured around three strategic focuses that answer the main questions about I3A's mission, vision and activities, which are:

FOCUS 1: WHAT DO WE DO?

This focus aims to define the main activities that take place in I3A, namely:

- ➢ Basic research
- ➢ Applied research
- ➢ Technology transfer
- ➢ Researcher training

FOCUS 2: HOW DO WE DO IT?

This focus aims to define how I3A's activities are carried out and what is needed in order to ensure their success. The answer to this question is that the following are required:

- ➢ People
- ➢ Infrastructure
- ➢ Funding
- ➢ Collaborations

FOCUS 3: HOW DO WE CONVEY IT?

Last but not least is the question of how everything developed in I3A is conveyed. This question is twofold: how I3A's activities are conveyed internally and are known in the organisation, and how it is perceived abroad, mainly among companies, but also among institutions and society in general. The reflection on how this is conveyed includes:

- ➢ Internally
- ➢ To companies and institutions
- ➢ To society

Each of the focuses includes a series of core strategic areas that are broken down into actions for compliance. In turn, the actions will take the shape of interventions that ensure they are met.

5. PROPOSED STRATEGIC CORE AREAS AND WORK ACTIONS BY FOCUS

FOCUS	CORE AREAS	ACTIONS
FOCUS 1: **WHAT DO WE DO?**	CORE AREA 1: Generate knowledge and technology	A1.1. Implement tools to promote collaboration
		A1.2. Identify new cross-cutting, future-looking research niches
		A1.3. Define a high-impact joint interdisciplinary project
	CORE AREA 2: Knowledge and technology transfer	A2.1. Internally promote the culture of knowledge and technology transfer
		A2.2. Create an external advisory board focused on industrial transfer
		A2.3. Promote collaboration with business organisations and companies at regional, national and international levels
	CORE AREA 3: Staff training in research and technology	A3.1. Promote visits to leading laboratories
		A3.2. Extend training scholarships
		A3.3. Continuing with the young researchers conferences
		A3.4. Maintain bridging and training contracts

FOCUS	CORE AREAS	ACTIONS
FOCUS 2: **HOW DO WE DO IT?**	**CORE AREA 4:** Attract talent and consolidate research careers	A4.1. Bolster participation in calls to attract researchers
		A4.2. Promote the figure of the researcher
		A4.3. Promote stays for leading young researchers from outside I3A as a way to attract talent
		A 4.4. Promote lines of financial support in order to continue the research career
	CORE AREA 5: Increase support to researchers (services and infrastructure)	A5.1. Maintain and renew key infrastructure for I3A
		A5.2. Make the services of I3A known to researchers
		A5.3. Adapt the size of in-house staff to the services demanded by researchers
	CORE AREA 6: Encourage fundraising	A6.1. Bring in more funding for R&D projects
		A6.2. Bring in I3A resources to improve the services provided
		A6.3. Improve base funding of I3A

FOCUS	CORE AREAS	ACTIONS
FOCUS 3: **HOW DO WE CONVEY IT?**	**CORE AREA 7:** Disseminate results and monitor group performance (publications and patents)	A7.1. Continuous improvement of the quality of the Institute's scientific output
		A7.2. Group monitoring and evaluation
	CORE AREA 8: I3A Communication and image	A8.1. Improve internal communication
		A8.2. External communication
		A8.3. Reinforce the I3A brand internally

6. ACTION DATA SHEETS

This chapter contains the data sheets for all the proposed actions.

CORE AREA 1: GENERATE KNOWLEDGE AND TECHNOLOGY

ACTION DATA SHEET									

A1.1: Implement tools to promote collaboration									
Definition	Analyse and implement tools to promote internal collaboration through common interdisciplinary projects								
In charge	Subdirector of Planning (Elías Cueto)								

SPECIFIC ACTIONS									

Description	2022			2023			2024			2025		
Create and maintain a showroom in the office area of the Institute/entrance to the R&D building	■											
Hold specific multidisciplinary meetings		■			■			■				■
Associate the award of a proportion of the grants to multi(inter)disciplinary projects		■			■			■				■

INDICATOR SCORECARD				

Indicators	Goals			
	2022	**2023**	**2024**	**2025**
Create the showroom	Complete	Update	Update	Update
Multidisciplinary meetings	1	1	1	1
Number of scholarships associated with multi(inter)disciplinary projects	10%	15%	20%	20%

ACTION DATA SHEET

A1.2: Identify new cross-cutting, future-looking research niches

Definition	Identify research areas that will allow future multi- and interdisciplinary lines of research.
In charge	Subdirector of Planning (Elías Cueto)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Create discussion forums on future R&D with companies and social organisations				
Foresight analysis in different fields, R&D ideas for the future				

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Set up at least one specific forum per year on impact issues	1	1	1	1
Identify cross-cutting, multidisciplinary topics and implement partnerships	1	1	1	1

ACTION DATA SHEET

A1.3: Define a high-impact joint interdisciplinary project

Definition	Identify, coordinate and maintain research topics involving different groups from the Institute and other institutes.
In charge	Subdirector of Planning (Elías Cueto)

SPECIFIC ACTIONS

Description	2022				2023				2024				2025			
Define the multidisciplinary project idea		■				■				■				■		
Search for project funding			■				■				■				■	
Launch and start-up				■				■				■				■

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Identify projects in key areas (preferably coinciding with ultramodern laboratories areas)	1	1	1	1
Search for project funding	1	1	1	1
Launch and start-up	1	1	1	1

ACTION DATA SHEET

A2.1. Internally promote the culture of knowledge and technology transfer

Definition	Undertake actions that increase the feeling that knowledge transfer is an important aspect of our work as researchers in a university institute, and reduce rejection of these activities.
In charge	Subdirector of Transfer (Alfonso Ortega)

SPECIFIC ACTIONS

Description	2022			2023			2024			2025		
Identify, within I3A, a Relevant Group of Researchers with a long track record of transfer, to serve as a driving force and lead the cultural change	■											
Develop an action plan linked to promoting cultural change		■			■			■			■	
Prepare a strategy for rewarding technology transfer		■			■			■			■	
Implement and develop actions to promote cultural change			■			■			■			■
Implement and develop actions to reward or stimulate technology transfer				■			■			■		

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Select a group of internal transfer experts to lead the cultural change	Create	-	-	-
Prepare an analysis document on actions related to the promotion of cultural change	Start	Progress	Progress	Progress
Report on feasible alternatives for rewarding technology transfer	Start	Progress	Progress	Progress
Implement actions related to promoting the cultural change defined in the action plan	1	1	1	1
Implement actions to reward or stimulate technology transfer	0	1	1	1

ACTION DATA SHEET

A2.2. Create an external advisory board focused on industrial transfer

Definition	Set up procedures and functions to create and implement an external board with an industrial focus.
In charge	Subdirector of Transfer (Alfonso Ortega)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Define the board's clear goals (discussion of future needs of companies, etc.) and its way of working (yearly meetings)	███			
Create an advisory board with a mixed academia-industry profile	░░█			
Meetings and actions of the Advisory Board		░█	░█	░█

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Create the Advisory Board	YES/NO			
Meetings of the Advisory Board in order to develop action proposals		1	1	1

ACTION DATA SHEET

A2.3. Promote collaboration with business organisations and companies at regional/national and international level

Definition	Carry out appropriate actions in order to improve the Institute's relationship with companies, thus increasing the degree of collaboration between the industrial sector and the research groups.
In charge	Subdirector of Transfer (Alfonso Ortega)

SPECIFIC ACTIONS

Description	2022				2023				2024				2025			
Participation in national and international events aimed at collaboration with companies		▉				▉				▉				▉		
I3A organises networking days with businesses and hubs	▉				▉				▉				▉			
Prepare a catalogue of research group capabilities (including TRL and economic sector as applies for each capability)			▉				▉				▉				▉	

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Participation in national and international events (with active presence of the management team and I3A members)	1	1	2	2
Meetings with companies, relevant stakeholders and hubs	2	2	2	3
Prepare a document and web section on the technological capabilities of the research groups	Prepare	Update and progress	Update and progress	Update and progress

ACTION DATA SHEET

A3.1: Promote visits to leading laboratories

Definition	Promote the internationalisation of research activity through researcher visits to leading laboratories
In charge	Subdirector of Training (José J. Guerrero)

SPECIFIC ACTIONS																	

Description	2022				2023				2024				2025			
Coordinate and report on calls for mobility aid		■				■				■				■		
Encourage internal mobility within the institute				■				■				■				■

INDICATOR SCORECARD				

Indicators	Goals			
	2022	2023	2024	2025
Yearly number of research stays carried out in leading laboratories	30	35	40	40
Number of researchers in training with significant exchange between laboratories	3	5	7	9

ACTION DATA SHEET

A3.2: Extend training scholarships

Definition	Encourage access to and initiation in research for students with high academic performance by funding scholarships in research groups
In charge	Subdirector of Training (José J. Guerrero)

SPECIFIC ACTIONS

Description	2022		2023		2024		2025	
Internal calls for scholarships with practical training and dissertation	▪	▪	▪	▪	▪	▪	▪	▪
Encourage scholarship holders to take part in the Young Researchers Conferences		▪		▪		▪		▪
Liaise with other organisations to carry out joint calls for scholarships (ITAInnova, Chairs, etc)	▪		▪		▪		▪	

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Develop and approve a budget for internal calls	YES/NO	YES/NO	YES/NO	YES/NO
Yearly number of student scholarships (some multidisciplinary; see A1.1)	22	25	27	30
Reach collaboration agreements with other organisations	YES/NO	YES/NO	YES/NO	YES/NO

ACTION DATA SHEET

A3.3: Continue with the Young Researchers Conferences

Definition	Publicise the work of young researchers carrying out their doctoral theses Promote internal and external awareness of I3A's activities Teach young people how to present and disseminate their research results
In charge	Subdirector of Training (José J. Guerrero)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Encourage participation in the Young Researchers Conferences	▪	▪	▪	▪
Publish contributions to the Youth Conferences	▪	▪	▪	▪
Invitations to researchers and technologists with experience in transfer as lecturers	▪	▪	▪	▪
Training in scientific dissemination	▪	▪	▪	▪

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Develop a Young Researchers Day	YES/NO	YES/NO	YES/NO	YES/NO
Publish minutes	YES/NO	YES/NO	YES/NO	YES/NO
Develop a scientific dissemination conference	YES	YES	YES	YES

ACTION DATA SHEET

A3.4: Maintain bridging and training contracts

Definition	Encourage applications for grants to hire pre-doctoral research staff in training Retain talent with high-academic level students finishing their Master's degree who have a research vocation
In charge	Subdirector of Training (José J. Guerrero)

SPECIFIC ACTIONS

Description	2022				2023				2024				2025			
Internal call for grants to co-fund bridging contracts for young researchers			▓				▓				▓				▓	
Encourage applications for grants to hire pre-doctoral research staff in training			▓	▓		▓	▓	▓			▓	▓			▓	▓

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Develop and approve a budget for internal calls	YES/NO	YES/NO	YES/NO	YES/NO
Yearly evaluation of results based on data for previous years	1	1	1	1

CORE AREA 4: ATTRACT TALENT AND CONSOLIDATE RESEARCH CAREERS

ACTION DATA SHEET

A4.1: Bolster participation in calls to attract researchers

Definition	Analyse calls, selection and support in applications
In charge	Subdirector of Internationalisation and Fundraising (Mª Ángeles Pérez)

SPECIFIC ACTIONS

Description	2022			2023			2024			2025		
Disseminate specific programme calls (ARAID, Ramón y Cajal, Juan de la Cierva, etc.)												
Select and support for applications (ARAID, Ramón y Cajal, Juan de la Cierva, etc.)												
Apply, as I3A, for a COFUND grant for PhD students												

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Number of researchers ARAID, Ramón y Cajal and/or Juan de la Cierva, etc. attracted every year	2	2	2	3
Obtain a COFUND project during the lifetime of the strategic plan			1	

ACTION DATA SHEET

A4.2: Promote the figure of the researcher

Definition	Highlight and dignify the figure of the researcher
In charge	I3A Director (Pablo Laguna)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Influence and stimulate UNIZAR towards actions leading to job security, research career, involvement in teaching, etc.	■	■	■	■
Show the individual research lines and capabilities on the web	■			

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Regulatory changes at UNIZAR in this direction			YES/NO	
Update the website to make the researcher more relevant		YES/NO		

ACTION DATA SHEET

A4.3: Promote stays for leading young researchers from outside I3A as a way to attract talent

Definition	Promote and support attracting leading young researchers from outside I3A through stays in I3A
In charge	Subdirector of Internationalisation and Fundraising (Mª Ángeles Pérez)

SPECIFIC ACTIONS

Description	2022				2023				2024				2025			
Hold specific meetings to present calls (MSCA-PF, and others)	■				■				■				■			
Prepare a specific offer with interested groups		■				■				■				■		
Launch applications			■				■				■				■	

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Set up at least one informative meeting per year	1	1	1	1
Submit applications	1	1	1	1
Number of researchers who complete a stay in I3A	1	1	1	1

ACTION DATA SHEET

A4.4: Promote lines of financial support in order to continue the research career

Definition	Foster the transition of young PhD graduates as they look to consolidate their research careers
In charge	Subdirector of Institute Staff (José Ángel Peña)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Liaise with funders with a view to including a final year (4th) of funding as young doctors in public and public-private calls for predoctoral training (similar to FPI and FPU predoctoral contracts).	■■■	■■■	■■■	■■■
Analyse the option of calling for short-term "bridging contracts" in order to search for post-doctoral contracts after completing third-cycle studies	□□■	□□■	□□■	□□■

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Achieve 4th year of funding as doctors in public and public-private calls	YES/NO	YES/NO	YES/NO	YES/NO
Call for short-term "bridging contracts" to search for Postdocs created	YES/NO	YES/NO	YES/NO	YES/NO

ACTION DATA SHEET

A5.1: Maintain and renew key infrastructure for I3A

Definition	Acquire new scientific infrastructure in state or regional institutional calls
In charge	Subdirector of Infrastructure (José Ángel Peña)

SPECIFIC ACTIONS

Description	2022			2023			2024			2025		
Coordinate request for new equipment by I3A groups (regularity: depending on call)	■			■			■			■		
Update the catalogue of equipment acquired through institutional public calls (regularity: when new equipment is added)			■			■			■			■
Review public prices and working procedure (new and old equipment)			■			■			■			■

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Call number new subsidised equipment / Call number requested equipment	80%	80%	80%	80%
Inclusion of new equipment in the catalogue	YES/NO	YES/NO	YES/NO	YES/NO
Review public prices and working procedure	YES/NO	YES/NO	YES/NO	YES/NO

ACTION DATA SHEET

A5.2: Make the services of I3A known to researchers

Definition	Create the "services charter" offered by I3A to its members
In charge	Subdirector of Services and Institute Staff (José Ángel Peña)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Draw up I3A's services charter	▓			
Create and promote I3A intranet	▓	▓	▓	▓
Promote the services charter among researchers (I3A intranet)	▓	▓	▓	▓
Regularly review changes in the services offered (inclusions modifications withdrawals) and inclusion in the services charter (promotion on I3A intranet)	▓	▓	▓	▓
Create a suggestions box for service improvement (I3A intranet)	▓	▓	▓	▓

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Draw up the services charter	Complete	Review	Review	Review
Create and promote I3A intranet	Create	Promotion	Promotion	Promotion
Promote the services charter	1	1	1	1
Create a suggestions box for service improvement	Create	Promotion	Promotion	Promotion
Number of suggestions received	N	N	N	N
Number of new services created	N	N	N	N
Number of service changes	N	N	N	N
Number of service withdrawals	N	N	N	N

A5.3: Adapt the size of in-house staff to the services demanded by researchers

Definition	Evaluate the need for new professional profiles among I3A's in-house staff, and analyse the workload of current staff
In charge	Subdirector of Services and Institute Staff (José Ángel Peña)

SPECIFIC ACTIONS

Description	2022				2023				2024				2025			
End short-term contracts among I3A's own staff		■														
Review of functions per position (related to the services charter)	■				■				■				■			
Workload analysis by post (linked to services charter)	■				■				■				■			
Review temporary hiring needs (congresses, summer/holidays, travel, etc.).		■				■				■				■		
Evaluation of possible new professional profiles				■				■				■				■

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Number of persons hired / Number of persons hired in 2021	1	>1	>1	>1
Actions analysis by post	YES/NO	YES/NO	YES/NO	YES/NO
Workload analysis by post	YES/NO	YES/NO	YES/NO	YES/NO
Review of the need for temporary hiring	YES/NO	YES/NO	YES/NO	YES/NO
Number of temporary hires	N	N	N	N

CORE AREA 6: ENCOURAGE FUNDRAISING

ACTION DATA SHEET

A6.1. Bring in more funding for R&D projects	
Definition	Set up actions and ways to increase the funds raised by the Institute in public and private R&D projects
In charge	Subdirector of Technology Transfer, Industry Relations, Dissemination and Technology (Alfonso Ortega)

SPECIFIC ACTIONS

Description	2022			2023			2024			2025		
Organise events to convey the appropriate information to each group, in order to better obtain projects aligned with national and European strategic lines	■			■			■			■		
Disseminate information on public calls for funding (I3A news)	■	■	■	■	■	■	■	■	■	■	■	■
Increase project proposals for funding lines	■	■	■	■	■	■	■	■	■	■	■	■
Increase research projects in collaboration with companies and institutions	■	■	■	■	■	■	■	■	■	■	■	■

INDICATOR SCORECARD

Indicators	Goals			
	2022	**2023**	**2024**	**2025**
Infodays to provide groups with information on calls	1	1	2	2
Proposals submitted to public funding calls (improvement based on 2021)	+5%	+7%	+9%	+12%
Research projects in collaboration with companies and institutions (improvement based on 2021)	+5%	+7%	+9%	+12%

ACTION DATA SHEET

A6.2. Bring in I3As resources to improve the services provided

Definition	Maintain and bolster existing actions and initiate new ways to increase the resources raised by the institute to improve the provision of services
In charge	Subdirector of Technology Transfer, Industry Relations, Dissemination and Technology (Alfonso Ortega)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Develop a range of I3A services for groups and companies in order to generate their own funds	■	■	■	■
Initiate guidelines for improving existing services and proposing new ones	■	■	■	■

INDICATOR SCORECARD

Indicators	Goals			
	2022	**2023**	**2024**	**2025**
Report with analysis of new and existing services	Start	Progress	Progress	Progress
Master document for I3A services offer and improvement plan	Start	Progress	Progress	Progress
Funds raised by I3A based on services (improvement based on 2021)	+5%	+7%	+9%	+12%

ACTION DATA SHEET

A6.3: Improve base funding of I3A

Definition	Increase in the base funds available to I3A for science policy making
In charge	I3A Director (Pablo Laguna)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Call on UNIZAR to develop a formula for economic distribution among IUIs that does not penalise the size of IUIs as heavily as the current one				
Search for hybrid patronage formulas with companies that co-fund I3A services				
Call on the DGA to, through UNIZAR and the RPT, take on part of the staff costs of IUI, and release funds to extend science policy				
Ensure institute membership fees are included as eligible expenses in the budgets for DGA groups				

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Modify the allocation formula in order to mitigate the negative effect of the size of the institute on funding		YES/NO		
Obtain professorships or other co-funding arrangements	1	1	1	1
Increase in the use of I3A services (improvement based on 2021)	+4%	+6%	+8%	10%
Inclusion in RPT and charged to UNIZAR-DGA budget		YES/NO		

CORE AREA 7: DISSEMINATE RESULTS AND MONITOR GROUP PERFORMANCE
(PUBLICATIONS AND PATENTS)

ACTION DATA SHEET

A7.1: Improve the level of publications in I3A									
Definition	Encourage publication in quality scientific journals								
In charge	Subdirector of Planning (Elías Cueto)								

SPECIFIC ACTIONS									
Description		**2022**		**2023**		**2024**		**2025**	
Encourage publication in Q1 journals									
Involve the groups with the worst indicators									

INDICATOR SCORECARD				

Indicators	Goals			
	2022	**2023**	**2024**	**2025**
Percentage of publications in first quartile scientific journals	60%	65%	70%	75%

ACTION DATA SHEET

A7.2: Group monitoring and evaluation

Definition	Monitor and evaluate group performance
In charge	I3A Director (Pablo Laguna)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Define simplified evaluation criteria and their continuous adaptation	▓▓▓▓	░░▓▓	░░▓▓	░░▓▓
Apply the evaluation on previous year's data, starting in 2023	░░░░	▓▓▓▓	▓▓▓▓	▓▓▓▓
Weighted use of evaluation results in order to resolve internal calls (scholarships, bridging contracts, etc.)	░░░░	░░░░	▓▓▓▓	▓▓▓▓

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Develop evaluation criteria and their approval by the board	Complete	Update	Update	Update
Yearly evaluation of data from previous years		YES/NO	YES/NO	YES/NO
Weighted use of evaluation results in order to resolve internal calls for scholarships, bridging contracts, etc.			YES/NO	YES/NO

CORE AREA 8: I3A COMMUNICATION AND IMAGE

ACTION DATA SHEET

A8.1: Improve internal communication	
Definition	Define an Internal Communication Plan. Search for common ground to improve it. Reinforce the sense of belonging to I3A among its researchers
In charge	Communication Unit (Melania Bentué)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Prepare an Internal Communication Plan after analysing and studying needs with research groups in I3A and with the Administration and services team. Disseminate the Plan.	■			
Implement and develop the actions set out in the Communication Plan		■	■	■
Newsletters: daily and monthly; issued in line with requirements	■	■	■	■
Corporate identity Style Guide. Indications for use of the I3A brand	■			

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Prepare the Communication Plan	YES/NO			
Monitor compliance with the actions of the Communication Plan		YES/NO	YES/NO	YES/NO
Number of groups with the Style Guide implemented in their actions		50%	75%	100%

ACTION DATA SHEET

A8.2: External Communication

Definition	Informative conferences and social and institutional events. Presence of I3A and its research groups in the media. Disseminate through online channels and tools: website and social media
In charge	Communication Unit (Melania Bentué)

SPECIFIC ACTIONS

Description	2022			2023			2024			2025		
Presence at conferences and events of interest, meetings with groups and organisations												
Disseminate in the media (press releases, video, audio, photographs, etc.) and proposals for topics to be covered by the national media												
Promote new communication projects, seeking differentiation and innovation												
Create new dissemination sections on I3A website												
Social media to increase the reach of the Communication: Twitter, Facebook, LinkedIn, Instagram												

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Presence in dissemination events with I3A brand (improvement based on 2021)	3%	5%	7%	9%
Mass media. Reach in national media	1	2	2	4
Promote unique, innovative communication projects	1	1	1	1
New sections on I3A website	1		1	
Social media presence and reach (improvement based on 2021)	+10%	+5%	+5%	+5%

ACTION DATA SHEET

A8.3: Reinforce the I3A brand internally

Definition	Bolster the sense of belonging to I3A among research groups that are part of the Institute. Make I3A and the possibilities it offers known among EINA students, to build bridges in terms of cooperation.
In charge	Communication Unit (Melania Bentué)

SPECIFIC ACTIONS

Description	2022	2023	2024	2025
Yearly I3A awards and recognition of those who have collaborated throughout the year with the activities carried out by the Institute (videos, podcasts, etc.)	▓	▓	▓	▓
Develop an action plan to help organise participation activities beyond strictly scientific ones: sports, competitions, open days... and welcome events	▓▓▓	▓▓▓	▓▓▓	▓▓▓
Collaborate with EINA student associations to bring I3A closer to university students	▓▓▓	▓▓▓	▓▓▓	▓▓▓

INDICATOR SCORECARD

Indicators	Goals			
	2022	2023	2024	2025
Yearly I3A Awards	YES/NO	YES/NO	YES/NO	YES/NO
Number of participation activities with I3A groups	N	N	N	N
Collaboration actions with student associations EINA/Fac. Science, …	N	N	N	N

7. MONITORING AND EVALUATION OF THE STRATEGIC PLAN

The **monitoring system** for the Strategic Plan has been designed based on the performance indicators proposal and the result of each of the actions envisaged in the Plan, as included in the previous files.

The results of the indicators proposed for each activity must be monitored by the person responsible for the action on a yearly basis, since this is how the goals have been defined. Some of these results may be included in the activities report carried out every year by I3A.

Monitoring the indicators is of great help when updating and adapting the actions to be implemented in the medium term, taking into account that:

- Monitoring allows us to reflect on the progress of the Plan, adjusting the goals and actions defined in line with its yearly review.
- No plan or strategy is static over time; both require a process of review and improvement.
- There are changes in the environment and in the organisations that the plans must adapt to.

Monitoring provides part of the empirical basis for evaluation. The evaluation is complementary to monitoring and requires more in-depth analysis; carrying out a final evaluation **in 2025** is therefore recommended in order to analyse the degree of compliance with the proposed measures and their effectiveness.

The evaluation will be carried out by a different body from the one that monitors the Plan (which will be I3A itself). A yearly follow-up or monitoring system will be proposed for the evolving indicators, starting in 2022.

The results of the plan's final evaluation should be collected before the proposal for the next strategic plan, applying qualitative and participatory tools to complement the quantitative analysis of the proposed monitoring system (working groups, online questionnaires, etc.).

ANNEX I: DETAILS OF THE PARTICIPATION PROCESS

This annex provides a more detailed account of the participation process carried out in drafting the I3A Strategic Plan 2022-2025.

As mentioned in section 1.2. Methodological proposal, the process has involved people and organisations that have, alongside the I3A management team and the consultancy team, taken part in preparing this Plan.

This Annex also serves to thank all the people and organisations that have taken part, whose activities are listed below.

The I3A management team involved in drafting the Strategic Plan consists of:

I3A MANAGEMENT TEAM	
Name	**Post**
Pablo Laguna Lasaosa	Director
Elías Cueto Prendes	Subdirector of Planning, Strategy, Quality and Evaluation
José Ángel Peña Llorente	Subdirector of Infrastructure, Services, Institute Staff and Institutional Relations
Mª Ángeles Pérez Ansón	Subdirector of Internationalisation and Fundraising
Alfonso Ortega Giménez	Subdirector of Technology Transfer, Industry Relations, Dissemination and Technology
José Jesús Guerrero Campo	Secretary and Head of Training and Dissemination

The IDOM consultancy team has included the following people:

CONSULTANCY TEAM	
Name	**Post**
Marian Arilla Herrero	Project Director and Main Consultant

Arancha Villarejo Urdániz	Strategy Consultant and Funding Specialist
Marta Alberti Ibarz	Strategy and Participation Processes Consultant
Lorenzo Gracia Blasco	Evaluation and Indicators Consultant

An online survey was carried out in order to complete the strategic analysis, addressed to all research groups and their members, as well as to I3A's administration and support staff. The survey was sent to 509 people, obtaining a response rate of approximately 23%, which, in the consultancy firm's experience, is within the usual range of responses in large surveys for defining plans and strategies.

The results of the survey helped to define the I3A SWOT, to know the degree of knowledge, satisfaction and opinion of I3A among its members, their view of the previous Plan, and the main goals and activities to be included in the plan proposed by the participants.

A sample survey is found in **Annex II**.

Fifteen personal interviews were also carried out with a view to fully understanding how I3A is perceived by different organisations involved in the science and technology ecosystem. These interviews were also very important in establishing the challenges of the Strategic Plan and the Vision to 2025.

The interviews were carried out with the people listed in the table below:

PERSONAL INTERVIEWS	
Name	**Post**
Pablo Laguna Lasaosa	Director of I3A
José Antonio Mayoral	Unizar Dean
Rosa María Bolea Bailo	Deputy Dean of Science Policy
Gloria Cuenca Bescós	Deputy Dean of Technology Transfer and Innovation
Javier Navarro Espada	Department of Industry: Director General of Industry and SMEs

Enrique Navarro Rodríguez	Department of Science: Director General of Research and Innovation
María Teresa Gálvez	ARAID
José Antonio Yagüe	Director of the EINA
Manuel González Bedia	Universities Department
Isabel García	MEP
Pilar Perla	Heraldo de Aragón
Manuel Doblaré	Former I3A Director
Rafael Bilbao	Former I3A Director
Ignacio Garcés	Former I3A Director
Manuel Silva	I3A Researcher and Member of the Royal Academy of Engineering

Working groups

Working groups that included both internal I3A staff and external people from other organisations and companies helped to define the strategic core areas and their main actions. Five working groups were set up, namely:

- Group 1: I3A Research groups
- Group 2: I3A Research groups
- Group 3: I3A Administration and support staff
- Group 4: Other research organisations in Aragon (and external)
- Group 5: Companies, hubs and business organisations

Each working group analysed different work areas. The group members contributed ideas related to these core areas, and initially prioritised the measures provided. All this was done through an online dynamic that allowed several components to the groups to attend, following the health safety measures in place for collaborative work. Two main tools were used for this purpose: TEAMS and MURAL applications.

The working groups were attended by the following:

GROUP 1: I3A RESEARCHERS	
Name	**Group**
Cristina Nerín	GUIDE
Luis Montano	ROPERT
José Miguel Burdío	GEPM
Diego Gutierrez	GRAPHICS & IMAGING LAB
Juan Domingo Tardós	ROPERT
Estefanía Peña	AMB
Uxue Alzueta	GPT
Luis Serra	GITSE
Miguel Menéndez	CREG
Norberto Fueyo	TFD
Jorge Santolaria	GIFMA
Elvira Mayordomo	COSMOS
Javier Zarazaga	IAAA
Eduardo Lleida	ViVoLab
Rafael Alonso	GTF
Esther Pueyo	BSICoS

GROUP 2: I3A RESEARCHERS	
Name	**Group**
José Manuel García	M2BE
Pablo Gimeno	ViVoLab
Francisco Merino	M2BE
Spyridon Kontaxis	BSICoS
Jorge Gracia	SID
Dayana Ribas	ViVoLab
Patricia Ugarte	CREG
Luis Riazuelo	RoPeRT
José Manuel Colom	COSMOS
Angela Hernandez	CENIT

GROUP 3: I3A ADMINISTRATION AND SUPPORT STAFF	
Name	**Group**
Elena Portero	Promotion Area and Technical Follow-up
Isabel Vives	Administration: Management Assistant
Pilar Gonzalez	Project Management
Yolanda Velicias	Centre Administration
Melania Bentué	Head of Communication
Ana Gimeno	Project Management
Teodoro Peleato	Information Services Technician
Dariel Figueredo	Systems Technician

GROUP 4: OTHER RESEARCH ORGANISATIONS	
Name	**Group**
Esther Borau	ITAINNOVA
Andres Llombart	CIRCE
Mª Jesus Lázaro	CSIC Management
Conrado Rillo	INMA
José María Fraile	ISQCH
Oscar López	ISS Aragon
Ignacio Romero	IMDEA Materials
Fernando Rey	INTECNO (Valencia)
Robert Griñó	IOC/UPC
Daniel Navajas	IBEC
Esteban De Manuel	Kronikgune

- Miguel Ángel Lagunas, from the CTT, was unable to attend, but sent information of interest that has been included in the analysis.

GROUP 5: COMPANIES, HUBS AND OTHER ORGANISATIONS	
Name	**Group**
José Juste	BSH
Miguel Ángel Caballero	SAMCA
Miguel Ángel Giménez	SAICA

Jorge Perez	IQE
Alfredo Calderón	TELTRONIC
Victor Alfaro	PODOACTIVA
Raimundo García	ARIÑO DUGLASS
David Romeral	CAAR AUTOMOTIVE HUB
Carlos Lapuerta	ARAHEALTH
Fernando Palacín	ARAGON HYDROGEN FOUNDATION
José María García	CEOE ARAGON
Javier Sanchez	FEUZ

Below are some images of the work sessions held:
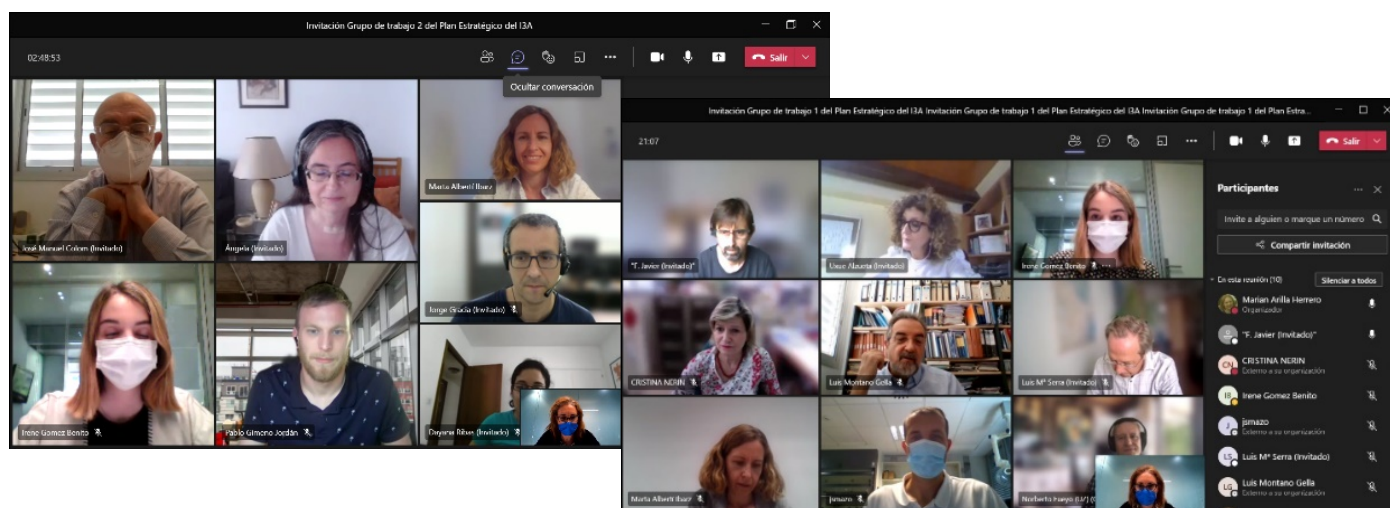
Images of work sessions of groups 1 and 2
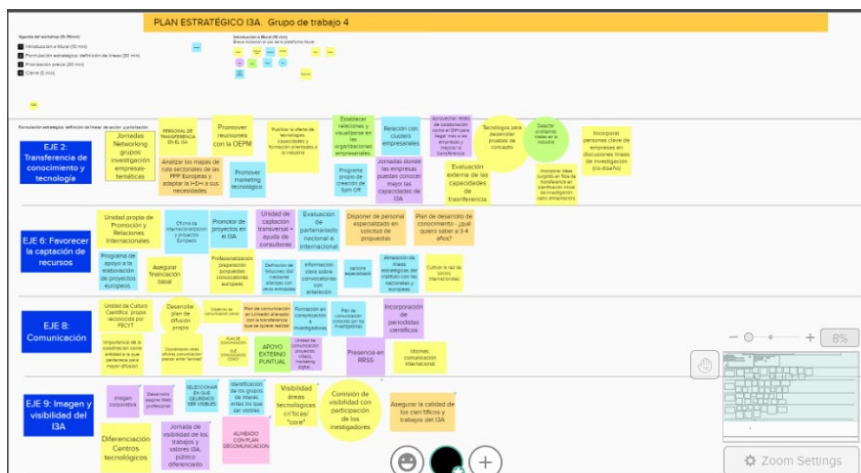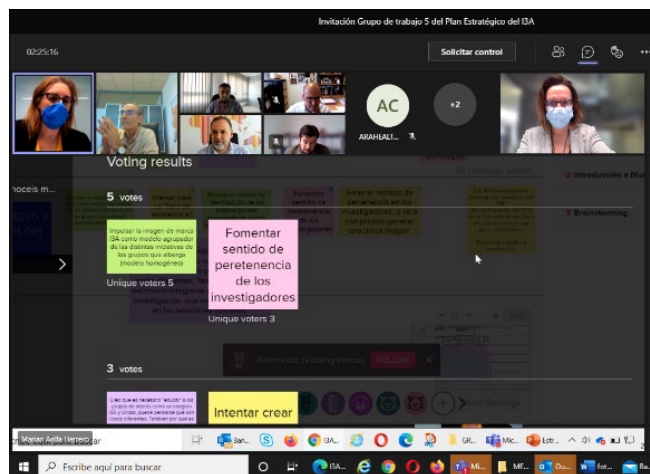
Images of the online work sessions

ANNEX II: STRUCTURE OF THE SURVEY

The survey is available in Spanish at the I3A website:

https://i3a.unizar.es/sites/default/files/2021-07/PLAN_ESTRATEGICO-2022_2025_1.pdf