3-i ICT – Guide for applicants

Revision history

Version	Date	Description
1.0	31/07/2024	1st version

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1   CITIC at the UDC

CITIC is the Centre for Information and Communications Technology Research, a unique research centre of the Universidade da Coruña (see section 7). The centre has over 150 affiliated researchers and is currently involved in over 50 active research projects with competitive funding from regional, national, and European calls. The annual scientific output of CITIC's research includes approximately 175 articles in JCR journals and over 200 international conference papers.

ICT covers a remarkable spectrum of scientific inquiry, from pure basic to highly applied research. CITIC research is organised around five areas:

- Artificial intelligence is mainly focused on designing and programming machines capable of performing tasks that require intelligence, with a wide range of crosswise applications in other fields.
- Data science and engineering are inherently multidisciplinary fields, with growing relevance in the big data era and interactions with several scientific disciplines.
- High performance computing is an essential tool for processing the large data sets needed to understand and meet social, scientific, and industrial challenges across a wide range of fields.
- Intelligent Networks and Services is a highly transferable, intersectoral area, especially in the field of Industry 4.0.
- Cybersecurity is a cross-disciplinary field that draws on and feeds into the other key areas of research at CITIC, including data processing and management, artificial intelligence systems, computation systems, and online services and communications.

2   About 3-i ICT

3-i ICT, International, Interdisciplinary and Intersectoral Information and Communications Technology PhD Programme, is a 60-month H2020 COFUND project funded by the European Union under a Marie Skłodowska-Curie grant agreement (101034261).

The aim of 3-i ICT is to provide 8 Early-Stage Researchers (ESR) with unique opportunities for basic and applied interdisciplinary research, training, and career development. To ensure the 3-i dimension, during the fellowship period, ESRs will:

- Acquire real experience and practice on interdisciplinary projects that bridge the gap between different fields of science, under the supervision of one expert from the field of ICT and one expert from a different field.
- Carry out secondments in non-academic institutions and/or companies to broaden and deepen their skills.
- Obtain International Doctorate certification, in accordance with UDC regulations.

3-i ICT is a catalyst programme, designed to transform young, talented PhD's into the next generation of independent ICT research leaders by widening and developing their competences across a range of areas and experiences. The programme also aims to boost ESRs' emerging careers by enhancing their employability in both academic and non-academic sectors.

The ESRs will complete a PhD degree with a **36-month employment contract**, which will be co-supervised by a CITIC researcher and an expert from another academic field. ESRs will be enrolled to any of the six academic PhD programmes linked to CITIC:

- Computational Science.

- Information and communications technology.
- Information technology and mobile network communication.
- Information technology research.
- Mathematical modelling and numerical simulation in engineering and applied science.
- Statistics and operational research.

The programme will have a high impact on CITIC's ability to attract, build and retain talent. The interdisciplinary PhD projects will open new lines of research and collaborations within CITIC and wit other entities worldwide.

The evaluation and selection process for candidates will be open, transparent and merit based. This process is designed to ensure the integrity, fairness, and transparency, in accordance with the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. The UDC was granted the HRS4R award for "HR Excellence in Research" in 2017. There is more information about the evaluation and selection process in Section 5.

3   PhD projects

All PhD projects will have a **supervision team** that will comprise:

- A main supervisor: a CITIC researchers qualified to guide a PhD thesis trough to completion and provide the candidate with training and support of the highest standard.
- A secondary supervisor: an experienced researcher from other academic discipline, from any national or international academic institution, research organisation or private company.
- A non-academic supervisor to monitor intersectoral secondments and help prepare the candidate for life outside the academia.

Each fellow together with the supervision team will create a **personalised career development plan** (PCDP), to help fellows to map out their goals, interests and needs. The PCDP will comprise a description of the PhD project and the main research objectives, potential risks, timeline, contingency plans, ethical considerations, and a secondment plan with tailored international and intersectoral secondments. It will include a plan for research and transferable skills training, a plan for dissemination, exploitation, and public engagement.

The PCDP will also include **research training** and non-research-orientated **transferable skills training** to enhance fellows' research abilities and potential. The training programme for 3-i ICT will combine different types of activities, courses and methodologies and will be adapted to the individual needs of the fellows. All activities will be funded by 3-i ICT programme and in English.

Applicants can choose up to 4 PhD projects from the 8 offered in the 3rd call for candidates. Each PhD project is related to one of the five research areas of CITIC, and to one thematic External Panel. **Only 1 position will be funded in this third call.** Annex I include a full description of the PhD projects.

4   Eligibility criteria

The eligibility criteria are:

- **Early-Stage Researchers**: According to the MSCA definition, candidates should have less than four years' research experience, measured as full-time equivalent research experience, and not hold a PhD degree. Full-time equivalent research experience is measured from the date when a researcher obtained the degree entitling her/him/them to embark on a PhD, either in

the country in which the degree was obtained or in the country in which the researcher is recruited or seconded, irrespective of whether a PhD has been started or envisaged.

- **MSCA mobility rule**: Candidates must not have resided or carried out their main activity in Spain for more than twelve months in the three years immediately prior to the deadline of each call. Short stays such as holidays will be not taken into account.

- **Be entitled to enrol in a PhD at CITIC/Universidade da Coruña**: In accordance with UDC internal regulations, candidates must hold a bachelor's degree and a master's degree, equivalent to 300 ECTS in total, 60 of which should correspond to a Master's degree (or equivalent credit system for degrees awarded by universities outside the EU)[1]. Experts from the UDC International Doctoral School (EIDUDC) will perform a pre-admission eligibility check on all applications.

- **Be of any nationality**. **No age restrictions apply.**

Academic and research break periods due to maternity/parental leave, compulsory national military service, sick or family care leave, and procedures for obtaining refugee status will be no taken into account and will not be considered to measure research experience.

5   Application process

The application will be done via email to international.citic@udc.gal. 3-i ICT webpage will provide all the information and the documents needed to apply. During the application period, the project office will assist applicants with any queries about the submission process.

All queries and communications must be addressed to the project office (international.citic@udc.gal) and not to the supervisors of each PhD project. Supervisors are informed and directed to forward any queries to the PO. Supervisors must not have any contact neither support to the applicant at this stage. Both project and fellow will be rejected in this case.

Applicants will be required to complete and send an application form with personal and academic information (in English), and to attach the required support documentation:

- Copy of national ID card or passport.
- Bachelor's degree certificate and academic record.
- Master's degree certificate and academic record.
- CV.
- Cover letter.
- Supporting documents (employment records, personal documents such as birth certificates of children, disability certificates, etc., or documents supporting the compliance of the MSCA mobility rule).

All documents must be in English and attached in pdf. Each candidate can apply up to four different positions.

Applicants will receive a confirmation email upon submission. Selected candidates may be asked to provide documental proof of any of the submitted merits and/or compliance of the admissibility and eligibility criteria.

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[1] https://www.udc.es/en/eid/admision/

Following the deadline, a provisional list of admitted and excluded candidates will be published and candidates will have ten working days to submit any additional information, or corrections required.

6 Evaluation and selection process

The selection process is designed to ensure the integrity, fairness, and transparency of the process. The process will comprise six main stages and an additional redress stage to deal with any complaints or appeals following the publication of the provisional funding lists. The workflow is below.
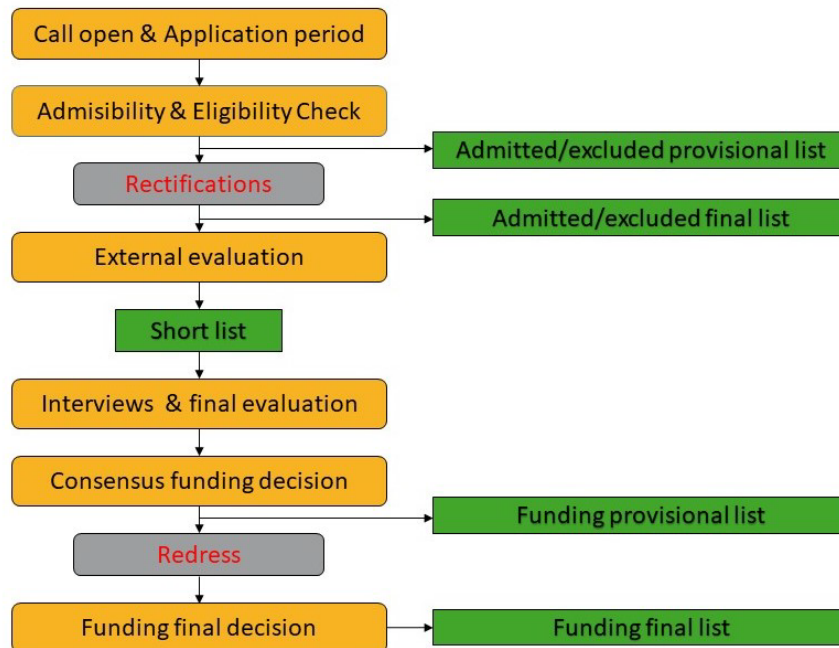
External evaluation

The external evaluation will be conducted by five external panels, based on the five main areas of research at CITIC. Each external panel will be composed by three external experts (independent evaluators not related to CITIC neither to the PhD projects offered and with no conflict of interest).

The evaluation criteria for the external evaluation are as follow:

Dimension	Criteria	Scoring
Academic background	Level and duration of academic training (number of ECTS, number of BSc and MSc degrees). Multidisciplinary nature of degrees and subjects. Academic excellence (record, prizes, participation in international programmes, e.g. Erasmus).	50%
Research experience	Publications. Full and short papers at international conferences. Prizes for research results.	15%
Professional experience	Experience in research environments (academic and non-academic). Multidisciplinary nature of professional experience.	15%
Training	Professional training and qualifications. Other non-academic training.	10%
Personal ambition	Quality of education and PhD project. Personal motivation.	10%

Scores for each candidate and for each external panel will be published in rank order ant 3-i ICT website. Candidates will be notified of the publication of scores by email and receive a short personal evaluation report. Following completion of all evaluations, the External Panels will propose a shortlist of the best applicants (highest scores) for each PhD project. At least the three highest scoring candidates for each position will be invited to participate in the next stage of the selection process, subject to a minimum overall of 75 %.

Since candidates may apply for up to four different positions, different scores may be awarded for each of their applications. Candidates applying for different positions may be shortlisted for multiple interviews.

Interviews and final evaluation

Shortlisted candidates will be invited to participate in the interview stage of the selection process. Interviews will be conducted by a mixed committee, comprising three external experts and the two supervisors of each PhD project, and will take place via videoconference platform.

Candidates will be informed of the structure of the interview and content at least one week in advance. All interviews will have the same structure:

- Candidate presentation.
- Theoretical-practical questions.
- General questions.

Interviews will be assessed based on the following criteria:

Dimension	Subcriteria	Scoring
Domain background	Knowledge of the disciplines involved in the chosen PhD project.	25%
Communication	Clear presentation. Ability to communicate during interview. Ability to talk about different topics.	25%
Creative problem-solving	Ability to solve theoretical-practical questions set by Mixed Committees. Creativity of proposed solution.	20%
3-i potential	Potential and willingness to work in a 3-i context.	20%
Career prospects	Suitability of profile to the research project.	10%

Candidates must obtain at least 60 % in the interview to be eligible for a 3-i ICT position. The final evaluation score will be the direct sum of the scores from the external evaluation and the interview.

Consensus funding decision

The chairperson of each external panel and a member of the project governing board will comprise the **selection committee** of 3-i ICT 3rd call for candidates.

Following completion of all interviews, the selection committee will propose the allocation of the grants on the basis of the scores from the previous stages of the selection process. A provisional list of selected candidates, including a reserve list of applicants, will be published on 3-i ICT website. Candidates will be notified on the decision by email.

Each candidate will be offered the position in which they have achieved the highest score. If two or more of the highest scores correspond to the same candidate, they/she/he will be allowed to choose the position they wish to be hired for. This process will be repeated until all for positions have been filled.

Where two or more candidates obtain the same score, the following tiebreak criteria will apply (in order of precedence):

- – Highest score in interview.
- – Highest score in academic background.
- – Gender, giving preference to women as they are underrepresented in the ICT sector.

All selected candidates will be asked to provide evidence of their compliance with the eligibility criteria.

Redress

Candidates will be given ten days to appeal the funding decision. Appeals should be sent by email to the Redress Committee, who will deal with all appeals within one month as from publication of the provisional funding decision. The final funding decision will be published on the 3-i ICT website and, once again, all candidates will be notified of the decision by email.

Following publication of the final funding decision, the successful candidate will be guided through their arrival, enrolment, and induction by the PO: signing of contracts, registration on PhD programme, initiation of residence permit procedures, support with VISA, travel, and accommodation arrangements, etc.

7   Working conditions

The selected ESRs will be employed under an employment contract with the UDC, and will enjoy the same treatment, benefits, opportunities, standards of safety and occupational health as those researchers at CITIC holding a similar position. Their status as MSCA fellows will be recognized in their 36-month contracts.

3-i ICT fellows will receive full social security coverage in compliance with Spanish legislation, including unemployment benefits, full social healthcare coverage, maternity, paternity, fostering, and adoption leave and paid holidays. In accordance with CITIC internal regulations, employment and working conditions will provide researchers a good work life balance. Researchers will also have access to a range of general UDC facilities, training offer and services.

The gross annual salary of each ESR will be 24,516,12 €, corresponding to a total annual remuneration cost of 32,508.00 € (2.709,00 €/month). The salary will comprise personal income tax arrangements, social security coverage and social benefits (parental leave, contribution to pension funds, severance payment, unemployment benefits, and health and accident insurance). If special needs allowance is needed, UDC will apply to the MSCA special needs allowance.

A variable research budget will be allocated to each fellow to cover any cost that may arise from their research (conference fees, travel and accommodation expenses for conferences and short research visits, open access fees, secondment mobility allowances).

The employment contracts of the ESRs will be incompatible with any other grant or contract, with payments that imply a contractual link of a similar nature, or with activities that may prevent the fellow from dedicating exclusively to the work that is the object of the contract. Acceptance of the contract implies carrying out the doctorate and the research work in person.

8   About the UDC

The UDC is a young public university, with an extensive catalogue of courses, including 39 undergraduate, 57 Master's and 36 PhD degree programmes. UDC's activity is coordinated around its three specialised campuses – Industry, Sustainable Development, and Innovation.

UDC and CITIC offer tailored specific courses and training to PhD students, according to their personal needs and their PhD project. The UDC International Doctoral School (EIDUDC) currently offers a selection of training and development activities specifically aimed at PhD students, in collaboration with the UDC Centre for Educational Training and Innovation (CUFIE), the Office of Research and Knowledge Transfer and the UDC Library. The EIDUDC/CUFIE programme also includes a Support Plan for PhD Researchers, which offers cross-disciplinary training courses throughout the academic year, covering general skills such as research methodology, gender analysis in research, research ethics and public speaking.

A Coruña and Galicia

CITIC and the UDC has an excellent social environment. A Coruña has several attractions, unique in Spain, that make it an ideal place to integrate work with a great quality of life, thanks to a modern network of services and a wide range of leisure activities for all tastes. In Galicia, the region where A Coruña is located, there are outstanding natural spaces and beaches, a rich historical and cultural heritage and an extraordinary gastronomy. Throughout the whole year you can enjoy a full schedule of social and cultural events. There are also numerous public and private sport facilities, such as golf courses and sailing facilities. You can see some of our tourist attractions here https://www.youtube.com/watch?v=ZtUqecPNXgI

Annex I – List of selected PhD projects

CODE	Title	CITIC RESEARCH AREA	INTERDISICIPLINARY RESEARCH AREA
2024-C3-001	Addressing challenging optimization problems in cell signalling networks with High Performance Computing and Cloud-based approaches	High Performance Computing	Biochemistry and molecular biology
2024-C3-002	Supporting the European green transition by combining artificial intelligence methodology and psychological behaviour models	Artificial Intelligence	Social Psychology
2024-C3-003	Mathematical modelling and numerical simulation of adhesive joints for naval steel	Data Science and Engineering	Naval constructions
2024-C3-004	Augmentative and Alternative Educational Technology for Executive Functioning in Children with Autism	Smart services and networks	Computer Languages and Systems
2024-C3-005	Modelling complex biological phenomena via inverse optimal control and inverse reinforcement learning	Data Science and Engineering	Chemical engineering Biochemistry and Molecular Biology
2024-C3-006	Distributed and parallel algorithms for inference of cell lineage trees	High Performance Computing	Genetics
2024-C3-007	Software Engineering and Data Science Techniques for Urban Building Energy Modeling	Data Science and Engineering	Land Use and Urban Planning
2024-C3-008	Virtual Reality in Pediatric Surgical Care, Communication, and Education	High Performance Computing	Surgery; Pediatrics; Physiology; Pathology; Anatomy and Comparative Pathology; Radiology and Physical Medicine