

EXPERTISE DESCRIPTION

INFORMATION ABOUT THE BELGIAN PARTNERS

LEADER	1	Adoc Talent Management Benelux - Adoc Talent Management (France)	SME (SRL)
	2	B12 Consulting	SRL
	3	Interface3.Namur	ONG
	4	University of Namur	

EXPERTISE OVERVIEW

CALL TOPIC(S) OF INTEREST:

DIGITAL-2023-SKILLS-04-BOOSTINGDIGIT-Boosting digital skills of young people, in particular girls.

CAPACITY OF THE APPLICANTS

The Belgian partners are a group of four institutions that complement each other in terms of stakeholders and missions. They cover all levels, from compulsory schooling to vocational training and the job market, as well as educational structures and teachers. They have already had the opportunity to work together, notably on projects related to gender issues in digital.

The Belgian partners are looking to join a consortium, in particular to ensure a French-speaking presence. Indeed, code week is no longer organized in French-speaking Belgium, and it would be interesting to develop French-speaking resources, in particular to reach other French-speaking regions (France, Luxembourg, Switzerland).

They form a strong core with well-established expertise in the call topic and a large network of third parties. They are qualified to carry out many of the actions listed in the call for proposals (see table below) and could, in this sense, complete the needs of a consortium ready to welcome them.

	Actions for Objective 1	Actions for Objective 2
Adoc Talent Management	1.6, 1.13	2.1, 2.2,2.4, 2.6, 2.7
UNamur	1.5, 1.8, 1.13, 1.14	2.1, 2.2 ,2.7
Interface3.Namur	1.5., 1.6.	2.2., 2.3, 2.4., 2.5.
B12 Consulting		2.4, 2.5, (2.)6, 2.7

OBJECTIVES

- Objective 1: scale up the EU Code Week initiative to spread computational thinking and coding to as many people as possible, focusing particularly on young people, teachers and schools.
- Objective 2: put a strong emphasis on boosting the digital skills of young people, particularly of girls, to encourage them to pursue studies in STEM disciplines and take up a career in ICT.

ACTIONS

(Objective 1) Scaling up the EU Code Week initiative in all EU Member States, EFTA and candidate countries by:

- (1.1) Managing the network of volunteer EU Code Week ambassadors, as well as volunteer leading teachers and coordinators at the education ministries or other educational authorities and organisations, by engaging them on different channels (including creating central and national communication channels), and regularly bringing these communities

together in physical as well as online meetings to discuss ideas and prospects for upcoming Code Week editions, to strengthen the community spirit (e.g. by organising team activities), and to strengthen cross-border collaborations among community members, schools and students;

- (1.2) Expanding the volunteer network by focusing more on attracting a younger audience (students and young professionals) to contribute to the initiative by organising activities and supporting communication actions around Code Week;
- (1.3) Managing the wider community of tens of thousands of teachers and coding enthusiasts and incentivising them to organise, register and participate in EU Code Week activities (including coding festivals, hackathons, etc.);
- (1.4) Running year-round innovative communication and engagement campaigns at European and national level (including paid promotion campaigns and working with influencers), taking care of existing (and possibly new) EU Code Week social media channels (including engaging with the audience, providing content in English as well as in different national languages), taking into account the social media audit performed in 2023, as well as developing, procuring and sending out goodies (e.g. t-shirts, bags, etc.) and taking care of the existing email mailboxes;
- (1.5) Upskilling, training and empowering teachers as well as school leaders in the areas of coding, computational thinking, digital literacy and the wider field of digital education via a multitude of activity types, such as MOOCs, TeachDays, study groups, webinars, etc.
- (1.6) Incentivising schools and teachers to become active in EU Code Week (including via upscaling the Code Week School Label, providing grants to schools/teachers to organise initiatives/events at local level, etc.);
- (1.7) Developing, managing and maintaining the EU Code Week website (<https://codeweek.eu>), supporting multilingual content and interaction, including translating new content into 29 languages, as well as improving the website taking into account the UX audit performed in 2023, as well as a proposal how to implement gamification mechanics on the website, and taking into account security assessment performed in 2023;
- (1.8) Providing accessible and easy-to-use resources, including coding challenges, learning bits, videos, and podcasts in English. A large part of these resources should also be translated into local languages. The educational resources provided should maintain a fun and interactive approach, be appealing to pupils and have a multidisciplinary character applicable also to non-ICT subjects.
- (1.9) Strengthening the network of coordinators at the education ministries or other educational authorities and organisations;
- (1.10) Providing support to the national networks to strengthen the cooperation and collaboration at national level between ambassadors, leading teachers and coordinators at the education ministries or other educational authorities and organisations, where needed.
- (1.11) Facilitating cross-country collaborations between ambassadors, leading teachers and coordinators at the education ministries or other educational authorities and organisations from different participating countries in order to encourage implementation of joint Code Week activities and sharing of best practices.
- (1.12) Managing existing relations with EU Code Week partners and building up new partnerships with key stakeholders (e.g. libraries, makerspaces, coding clubs, non-profit organisations, etc.) and actors from industry, with a particular emphasis on small and medium-sized enterprises (SMEs) as well as start-ups and companies with headquarters located in the European Union and eligible countries, and involving them in back-to-school visits in which companies and organisations lend their staff to schools or coding clubs for Code Week activities;

- (1.13) Developing new and innovative Code Week elements (e.g., launching best practice competitions, creating a new community of leading principals, etc.).
- (1.14) Conducting accompanying impact studies to demonstrate how participation in Code Week activities impacts pupils' learning outcomes and acquired digital skills. Input from the community of ambassadors, leading teachers and coordinators at the education ministries or other educational authorities and organisations on the collection and analysis of data should be encouraged.
- (1.15) Providing high quality documentation for a possible handover of the EU Code Week initiative as well as the EU Code Week website after the end of the project duration.

(Objective 2) To increase the pool of young people, and in particular girls, who would ultimately be interested in studying STEM and ICT and/or embarking on a digital career, by running strategic initiatives, including:

- (2.1) Introducing training activities for pre-school educators on how to introduce concepts including computational thinking and coding to pre-school children, e.g., by running unplugged activities.
- (2.2) Running free-of-charge courses or camps during holidays, evenings or weekends on digital topics targeted predominantly at girls attending primary or secondary schools, whereby preferably female teachers should be involved in the teaching to act as role models.
- (2.3) Organising extracurricular afternoon activities throughout the school year to keep pupils attending the above-mentioned courses/camps still engaged in the subject.
- (2.4) Organising career days targeted at pupils attending secondary schools and young people interested in opting for a career in ICT or digital-related fields, collaborating with female ICT specialists that can act as role models.
- (2.5) Providing study guidance/information events targeted at pupils attending secondary schools, their parents as well as young people.
- (2.6) For pupils attending secondary schools as well as young people interested in enrolling in a study programme, providing access to state-of-the-art laboratories, in order to enable them to experience the campus facilities and to follow seminars at higher education institutions from the most renowned experts in quantum computing, cybersecurity, AI, cloud, etc.
- (2.7) Running targeted awareness raising campaigns (e.g., together with influencers), with a focus on debunking stereotypes, tackling self-efficacy and confidence gaps of particularly girls and young women related to digital skills and breaking preconceptions (of girls, but also of parents and teachers) about the accessibility of tech careers, with special attention to and on International Girls in ICT Day.
- (2.8) Developing a sustainability plan to enable actions developed to be integrated at national level in ad hoc development plans ensuring the continuation of the initiatives engaged.

INFORMATION ABOUT THE EXPERT 1 - ADOC TALENT MANAGEMENT

ORGANISATION	Adoc Talent Management Benelux
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POSITION	Managing Director & Co-founder

HEADLINE:

Adoc Talent Management is a consultancy firm specialising in career management for PhDs and research staff, with a threefold activity of recruitment consultancy, training, and R&D focused on researchers (PhDs).

Our two European offices (in France and in Belgium) can contribute to the consortium.

POTENTIAL CONTRIBUTION:

Adoc Talent Management (www.adoc-tm.com) is the leading organisation specialising in career management for PhDs and research staff, with a threefold **activity of recruitment consultancy, training, and R&D focused on researchers (PhDs)**. Adoc Talent Management BENELUX is the Belgian office of the ADOC group. Two other offices are in Paris (since 2008) and Montreal, Canada (since 2017), giving the group an international dimension. Adoc Talent Management's corporate culture, created by PhDs, is rooted in the research and innovation ecosystem through its market positioning and its academic research staff's commitment to promoting PhDs. That's why we offer a range of awareness-raising workshops, training courses and coaching to help participants develop and improve their skills: in their research practice and in their knowledge of organisations, so that they are better prepared for a variety of high-level positions with increasing openness to the digital world, IT, AI, etc. The lecturers can speak the same language as research staff, PhD candidates or PhD holders. They have been through a similar experience, so there is complicity, understanding and a feeling of belonging to the same community. What's more, most of our company is made up of women with doctoral training in a variety of sectors, some of whom have already been in an entrepreneurial position at the start-up stage.

In Belgium and France, the Adoc Group has a team of around ten experts, the majority of whom hold doctorates. It should also be noted that these doctorates cover a very wide range of disciplines: life sciences, cognitive sciences, experimental physics, information and communication sciences, artificial intelligence, etc.

WHAT WE CAN BRING

With the aim of breaking new ground in raising awareness and improving the intake of women into high-level training and jobs in the digital sector, we are proposing to set up a **hackathon** followed by an **incubation pathway** for solutions with a high potential for feasibility and success. More specifically, our project proposal aims to encourage women to prepare for jobs in the STEAM/ICT field (advanced level), through integration into related high-level training courses. In other words, we are proposing a hackathon combined with an incubation programme, with the aim of developing solutions to encourage the integration of women into the digital world.

The aim of the hackathon will be to encourage the emergence of Deeptech projects (but not only) aimed at integrating women into the digital sector, obtaining high-level diplomas in the digital sector, and promoting the career paths of women in the digital sector (high-level diplomas, top management, etc.). More specifically, we have envisaged three specific areas of work and reflection: 1) pursuing studies in STEAM disciplines; 2) integrating women into this sector (meeting a company's needs with this strategy); 3) career development (managerial roles and C-level). We expect concrete proposals to emerge in these three areas via the hackathon. The target audience for participation in the Hackathon is universities and higher education establishments specialising in digital technology, but not exclusively, and running gender studies projects and/or CSR policies to promote women's access to studies and high-level jobs in digital technology.

12-month programme:

☐ Period 1 "Inspiration": cycle of conferences on the place of women in the digital sector (high-level training and jobs) - testimonies from CEOs, female PhDs candidates and/or PhDs in

digital/informatics-focused laboratories, state of the art. Objectives: to raise awareness, provide information, create a new image of the IT/digital sectors, and highlight the obstacles and levers for integrating women into the digital sector. Solicit our target audience to sign up for the Hackathon.

☐ Time 2 "Hackathon": 5 days alternating mentored moments of reflection/group work to emerge a solution + "training" times (keynote) on think design, project management, management, the Lean Canvas, the Pitch, ... Objectives: to bring out innovative projects elected by a competent jury of experts.

☐ Phase 3 "Incubation": pitch training, PoC development, prototyping, business model, fund-raising, etc. Objectives: to support the success of the projects while at the same time helping the entrepreneurs/intrapreneurs to build their professional project.

☐ Phase 4: "Marketing, dissemination, communication, investors": Presentation of the projects in the partner universities and higher education establishments, as well as to potential financiers and investors. The scheme will also be evaluated against our KPIs. Objectives: communicate our results to the ecosystem and to Belgian/European society. To test the experiment and the system.

REFERENCES

Selected contractor to support the development of the [T2M programme](#) under the Business Acceleration Services – European Innovation Council.

We are HR Coaches and trainers to support researcher – entrepreneur from the lab to the market.

INFORMATION ABOUT THE EXPERT 2 - B12 CONSULTING

ORGANISATION	B12 CONSULTING
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POSITION	Managing Partner

HEADLINE:

B12 Consulting is an IT services company, expert in advanced software development and artificial intelligence, whose mission is to develop innovative and customised IT solutions to meet the business challenges of its Clients.

Based in Louvain-la-Neuve since 2012, our team with a scientific DNA has already successfully led more than 400 projects in Belgium and internationally. From 2022, we are also present in Brussels.

POTENTIAL CONTRIBUTION:

In 2022-2023, B12 launched the STEM4Her programme, which focuses on supporting female students at the end of their secondary education in choosing and succeeding in higher education STEM studies.

In the final years of secondary school, 45% of students in maths and science are girls which do as well as boys in these subjects. However, at university, the gender gap grows with girls now accounting for only 30% of students in STEM subjects and, even more alarmingly, 17% in computer science, where they continue to do just as well as, or even slightly better than, boys.

Why do female students lose interest in STEM subjects when they make the transition to higher education? According to several studies, it is the lack of practical experience and the absence of role models that prevent female students from planning STEM careers.

STEM training and awareness-raising initiatives currently available in Belgium mainly target children and young teenagers (end of primary school), women undergoing retraining or re-entering the workforce and professionals already active and involved in the sector. However, as the above figures show, the gender imbalance in STEM is also, if not mainly, apparent at the end of adolescence and in the choice of further studies.

The ambition of the STEM4Her programme is therefore to remedy this problem and to surround girls more closely with role models, both female and male, experts and organisations active in STEM and digital technology in particular, in order to reduce the barriers and biases at the entrance to STEM courses and increase the number of female students choosing this pathway, as well as promoting the success of the first year of their bachelor's degree.

WHAT WE CAN BRING

This programme is built around the following 3 stages:

The first consists of identifying and highlighting the skills of female students in the 'hard sciences' (computer science, mathematics, physics, statistics and engineering) **through a 'hackathon' type event**, aimed solely at girls in the rhetoric year (beginning of the second semester). This first stage would bring together interested parties, raise awareness, inspire them and cultivate an enthusiasm and sense of pride around STEM ("Science Is Cool"). Following this hackathon, 10 winners would be selected for the rest of the programme: in addition to the skills identified, other parameters such as the socio-economic level of the neighbourhood of origin or the school attended could also constitute positive discrimination criteria for the choice of the 10 winners, in order to give students from less-favoured target groups the opportunity to access higher education and benefit from support in achieving this life project.

The second is to integrate the 10 winners of the hackathon into an 'incubation' programme to help them choose their studies, while working on the socio-economic biases and barriers to entry into scientific studies. The winners of the programme would be offered a high-quality laptop (such as a Macbook) and a selection of reference books, given the importance of these tools for their studies. The incubator will enable a number of initiatives to be organised between the hackathon and the start of their higher education studies, including invitations to conferences, a mini-internship in a company, contacts with female students and professionals in the technical and scientific sectors (role models), and help with passing the entrance exams to certain faculties.

The final stage aims to provide support for successful completion of the first semester of bachelor's studies, by organising tutoring and mentoring sessions and providing highly qualified support during the first blockade. This final stage would enable the incubated students to feel surrounded and to benefit from the support of the network they have created for themselves and the role models they have met during their transition to university and for their professional future.

The aim of this project is therefore to tackle a key point in the gender imbalance in STEM subjects and to complement other training initiatives for children and adults, by focusing on an audience at the end of secondary school. The aim of the programme is twofold: to increase the number of female students in STEM university courses and to encourage them to succeed in their studies as early as possible. Today, it is crucial to offer girls at the end of secondary school opportunities to discover STEM in a

practical way, support to gain confidence in themselves and their abilities, and encouragement from a recognised organisation and experts.

INFORMATION ABOUT THE EXPERT 3 - INTERFACE3.NAMUR

ORGANISATION	Interface3.Namur
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POSITION	digital inclusion project officer

HEADLINE:

Interface3.Namur is a non-profit association (asbl) created in 2004. Interface3.Namur is a training and digital inclusion centre, working to promote access to digital technology and employment for all. To participate in today's society and to work, digital tools are essential keys. Everyone must be able to master them, use them and even invent them.

The projects carried out by our association, its missions and actions, are based on a civic commitment : we wish to offer everyone the possibility of participating in society, which has become a connected society, by being educated and equipped in an egalitarian way, whatever their social origin, age and gender.

POTENTIAL CONTRIBUTION:

Interface3.Namur considers IT professions to be a real way forward for young people and wants to enable the most vulnerable people to have access to these professions. Our ASBL makes it a point of honour to ensure that gender diversity is increasingly widespread within the IT professions, particularly through its various missions.

We already have experience in developing tools and activities for schools, specifically for 12-15 year olds and we have also experimented the development of several reflections and tools on the issue of "gender and ICT".

With the "Gender-and-ICT" project, supported by the ESF (2014-2020 programming, with extension until 2022), Interface3.Namur promotes IT professions and highlights the advantages of more gender diversity in this sector, so that girls - like boys - in addition to being users, also become designers of technologies that shape the world. To raise awareness among young and old alike about the issue of women and digital technology, Interface3.Namur has proposed a series of free events throughout Wallonia, accessible from primary school onwards.

At the same time, with the support of the Walloon region, we have also developed various tools to help people find their way around the IT professions, such as an online escape game and non-generic job descriptions. These tools, available online, are aimed at both guidance seekers and those working with them.

We are working in partnership with UNamur on the "ALL for IT" project, which aims to provide to mixed-sex institutions a series of recommendations. The aim of these recommendations is to enable institutions and universities to increase the number of women in STEM subjects, and more specifically in IT, and to maintain them throughout their degree courses.

Within the framework of a Erasmus+ project (2023-2025), we combine these experiences to develop new tools for the school public, targeting teachers from lower-secondary schools. We carry out this European project with the aim of reducing the gender gap in STEM fields of study by reinforcing the skills of the teachers of STEM courses in terms of gender diversity management (gender aware, fight against gender stereotypes, gender inclusive education and teaching, etc.). We target those who teach pupils between the ages 11-15, in lower-secondary schools.

INFORMATION ABOUT THE EXPERT 4 - UNIVERSITY OF NAMUR

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HEADLINE:

The University of Namur is a pioneer in the development of digital skills. Among other things, it is the only university in Belgium with a fully independent computer science department. It has considerable expertise in CS didactics (how to teach young people about computer science) and in gender issues in CS-related fields and professions.

POTENTIAL CONTRIBUTION:

For a number of years now, the University of Namur, notably through Julie Henry's research, has been addressing the gender issue in IT, the digital gap among citizens and the lack of appeal of computer science studies for young people. Her expertise is now recognized, based on research results, and applied in various projects aimed at reintegrating computer science into schools, with a view to increasing the number of young people (and especially girls) studying these disciplines.

Publications (selected examples):

- Lombart, C., Smal, A. & Henry, J. "Tips and Tricks for Changing the Way Young People Conceive Computer Science." *Informatics in Schools. Engaging Learners in Computational Thinking: 13th International Conference, ISSEP 2020. Tallinn, Estonia, November 16–18, 2020, Proceedings 13*. Springer International Publishing, 2020.
- [Approach to Develop a Concept Inventory Informing Teachers of Novice Programmers' Mental Models](#) - Henry, J. & Dumas, B., 21 Oct 2020, *2020 IEEE Frontiers in Education Conference, FIE 2020 - Proceedings. Institute of Electrical and Electronics Engineers Inc.*, 9274045. (Proceedings - Frontiers in Education Conference, FIE; vol. 2020-October).
- [Designing digital literacy activities: an interdisciplinary and collaborative approach](#) - Henry, J., Hernalesteen, A., Collard, A.-S. - 21 Oct 2020, *2020 IEEE Frontiers in Education Conference, FIE 2020 - Proceedings*. (Proceedings - Frontiers in Education Conference, FIE; vol. 2020-October).
- [Perceptions of computer science among children after a hands-on activity: a pilot study](#) – Henry, J. & Dumas, B. - 2018 EDUCON - IEEE Global Engineering Education Conference.