



C O R T E X ²

ANNEX 1

Guidelines for Applicants

Open Call #2

Submission deadline: **August 15, 2024, 17:00 CET**



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement n° 101070192. This document reflects only the author's view, and the EU Commission is not responsible for any use that may be made of the information it contains.

Contents

1. INTRODUCTION	5
1.1 Context.....	5
1.2 CORTEX ² project	5
1.2.1 Team	5
1.2.2 Ambition	7
1.2.3 Specific objectives.....	8
1.2.4 Pilots	9
1.2.4.1 Pilot 1 – Industrial Remote Cooperation.....	10
1.2.4.2 Pilot 2 – Remote Technical Training	10
1.2.4.3 Pilot 3 – Business meetings	11
2. CALL FOR PROPOSALS.....	11
2.1 Objectives	11
2.2 Open Call #2 design.....	12
3. Eligibility criteria	26
3.1 Confidentiality and deadline	27
3.2 Type of Beneficiary (Applicant)	27
3.2.1 SME eligibility	28
3.3 Eligible countries	29
3.4 Proposal submission	29
3.4.1 Multiple Submissions	29
3.5 Language	29
3.6 Conflict of interest.....	30
4. HOW TO APPLY?.....	30
5. EVALUATION PROCESS.....	31
5.1 Step 1- Eligibility Check.....	32
5.2 Step 2 - External remote evaluation	33
5.2 Evaluation criteria	33
5.3 Step 3 - Intermediate ranking of proposals	35
5.4 Step 4: Consensus meeting.....	35
5.5 Step 5: Online interview	35



5.6	Step 6: Final ranking and selection	36
5.6	Redress process	37
6.	CONTRACTING	38
6.1	Sub-granted project negotiation and onboarding	38
6.2	Contract preparation	38
6.3	Contract signature	40
7.	ACTIVITIES DURING THE FUNDED PROGRAMME	40
7.1	CORTEX ² 9-month programme for third party co-development projects..	40
7.1.1	Sprint 1	40
7.1.2	Sprint 2	40
7.1.3	Sprint 3	41
7.2	Evaluation	41
7.3	Participation in events	42
8.	FINANCIAL SUPPORT PROVIDED	43
8.1	Financial support.....	43
9.	RESPONSIBILITY OF BENEFICIARIES.....	44
9.1	Data protection and confidentiality.....	44
9.2	Promoting action and giving visibility to the EU funding.....	44
10.	INTELLECTUAL PROPERTY RIGHTS	45
11.	Checklist	46
12.	Contact.....	47



List of Tables

Table 1 - CORTEX ² Consortium: list of partners.	5
Table 2 - Open Call 2 characteristics.	13
Table 3 - Co-development programme.....	15
Table 4 - Co-development Requirements: ethics, security and data management.	16
Table 5 - Topic#1 Embodied avatar animation	16
Table 6 Topic #2 Smart generator	18
Table 7 – T#3 Virtual experiences editor	20
Table 8 – T#4 Multi-Person Gesture Recognition (MPRR)	21
Table 9 T# 5 Gaussian-splatting-based reality capture for VR.....	22
Table 10 T#6 3D model database.....	23
Table 11 T#7 Real-time voice translation	24
Table 12 T#8 Anonymizing meeting's content for privacy-free data storage.....	25
Table 13 - CORTEX2 Open Call #2 evaluation criteria.....	34
Table 14 - Interview evaluation criteria.....	36
Table 15 - Requirements for contract preparation.....	38
Table 16 Payment distribution	44

List of Figures

Figure 1 - CORTEX ² Consortium.....	7
Figure 2 - CORTEX ² innovations.	8
Figure 3 - CORTEX ² Open Call 2 design.	12
Figure 4 - CORTEX ² Co-development design.....	14
Figure 5 - Evaluation process.....	32



1. INTRODUCTION

This document provides a full set of information regarding **CORTEX² 2nd Open Call for Proposals**, also referred to as **Open Call #2**.

All associated Annexes must be additionally read for the submission of a Proposal.

1.1 Context

The COVID-19 pandemic pushed individuals and companies worldwide to work primarily from home or change their work model to stay in business. Today, all the signs are that remote work is here to stay. But not all organizations are ready to adapt to this new reality, where team collaboration is vital.

Existing services and applications aimed at facilitating remote team collaboration — from video conferencing systems to project management platforms — are not yet ready to efficiently and effectively support all types of activities. Extended reality (XR)-based tools, which can enhance remote collaboration and communication, present significant challenges for most businesses.

1.2 CORTEX² project

The CORTEX² project stands for **COoperative Real-Time experiences with EXtended reality**. It is funded by the European Union's Horizon Europe research and innovation programme under grant agreement N° 101070192.

CORTEX² is developing a highly innovative and digital XR teleconference platform specifically geared to facilitate work and social activities involving physical interaction with the environment and remote objects — from remote assistance or training to working in collaborative spaces.

The project will democratise the integration of XR hardware and software into daily industrial processes for all types of operators, enabling next-generation tele-cooperation mechanisms that will accelerate the future of work and validate the scalability potential through competitive calls.

1.2.1 Team

The CORTEX² consortium is formed by 10 organizations in 7 countries, which work together for 36 months.

Table 1 - CORTEX² Consortium: list of partners.

Company name	Abbreviation	Country
Actimage GmbH	ACT	Germany
ALE International	ALE	France



Commissariat A L Energie Atomique ET AUX Energies Alternatives	CEA	France
Deutsches Forschungszentrum fur Kunstliche Intelligenz Gmbh	DFKI	Germany
F6S Network Ireland Limited	F6S	Ireland
Intracom Sa Telecom Solutions	ICOM	Greece
Katholieke Universiteit Leuven	KUL	Belgium
Linagora Grand Sud Ouest SA	LINA	France
MTU Australo Alpha Lab	AUS	Estonia
Universitat Jaume I De Castellon	UJI	Spain

- **Two academia and research organisations** (DFKI, CEA) with outstanding scientific and technological expertise, required to deliver high-quality concepts, technologies, methods and algorithms.
- **Two academia (UJI, KUL) from the social sciences and humanities** that will contribute to making sure of the usability and exploitability of results with regard to EU legislation and values.
- **Four technical ICT providers** (ALE, LINA, ICOM, ACT) offering strong technical knowledge as well as an open-source business model and intention to exploit CORTEX² results.
- **Two SMEs with successful experience in ICT startup innovation business** (F6S, AUS), necessary to the success of the FSTP mechanism as well as the broad dissemination and exploitation of the CORTEX² results.





Figure 1 - CORTEX² Consortium.

1.2.2 Ambition

The mission of CORTEX² is to democratize access to the remote collaboration offered by next-generation XR experiences across a wide range of industries and SMEs.

To this aim, CORTEX² will provide the following:

- Full support for **augmented reality (AR) experiences** as an extension of video conferencing systems when using heterogeneous service end devices through a novel Mediation Gateway platform.
- Resource-efficient **teleconferencing tools** through innovative transmission methods and automatic summarization of shared long documents.
- Easy-to-use and powerful **extended reality (XR) experiences** with instant 3D reconstruction of environments and objects, and simplified use of natural gestures in collaborative meetings.
- Fusion of vision and audio for **multichannel semantic interpretation**, and enhanced tools such as **virtual conversational agents** and **automatic meeting summarization**.
- Full **integration of Internet of Things (IoT) devices into XR experiences** to optimize interaction with running systems and processes.
- **Optimal extension possibilities and broad adoption** by delivering the core system with **open APIs** and launching **open calls** to enable further technical extensions, more comprehensive use cases, and deeper evaluation and assessment.








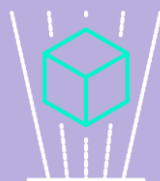
		
Easy-to-use and powerful XR experiences with instant 3D reconstruction of environments and objects, and simplified use of natural gestures in collaborative meetings	Full integration of internet of things (IoT) devices into XR experiences to optimise interaction with running systems and processes	Full support for augmented reality (AR) experiences as an extension of video conferencing systems when using heterogeneous service end devices through a novel Mediation Gateway platform
		
Resource-efficient teleconferencing tools through innovative transmission methods and automatic summarization of shared long documents	Fusion of vision and audio for multichannel semantic interpretation and enhanced tools such as virtual conversational agents and automatic meeting summarization	Optimal extension possibilities and broad adoption by delivering the core system with open APIs and launching open calls to enable further technical extensions, more comprehensive use cases, and deeper evaluation and assessment

Figure 2 - CORTEX² innovations.

1.2.3 Specific objectives

- **Development of an open digital workplace for generic XR experiences.** The goal is to develop an open, versatile, inclusive and scalable digital workplace — thus addressing

the challenges of the current limitation of technologies to support a large number of simultaneous users, joining with possibly heterogeneous devices.

- **Reduced environmental footprint of tele-cooperation.** The use of videoconferencing systems has a significant environmental footprint. For example, one hour of streaming or videoconferencing can emit between 150 and 1,000 grams of carbon dioxide, depending on the service used. During online calls, many documents are shared, often just to convey the general idea of their content. Another of the project's innovations will be to automatically summarise long documents before sharing them and send the full version only on demand.
- **Natural, flexible and plug-and-play XR collaborative experiences.** Extended Reality experiences should be easy to use even for occasional users without strong technical background. Our objective is to simplify the use of AR by including several technical modules in our framework:
 - a. Instantaneous 3D modelling
 - b. Natural gestures recognition and interpretation
 - c. Semantic matching of surrounding spaces
- **Semantic visual/audio fusion for enhanced functionalities.** High-level semantic understanding of visual situations and audio conversations will be beneficial to the users of remote tele-cooperation tools since it allows for the development of additional services such as automatic meeting summary, visual AR support for spoken conversation and alignment of semantic spaces.
- **Integration of IoT information for immersive video conferencing experience.** The objective is to create more immersive experiences for participants of videoconferences, by integrating rich contextual IoT information to video streams, rendered as AR annotations on top of displayed objects and persons.
- **Ethical, legal and social implications of XR-based tele cooperative work.** CORTEX² will create a novel technology to facilitate remote collaborative work, which raises ethical, legal and social challenges.

1.2.4 Pilots

The project will implement three different use cases as pilots to test the integration of all the components of the CORTEX² framework.



1.2.4.1 Pilot 1 – Industrial Remote Cooperation

The pilot will demonstrate that an XR immersive experience can be reached with heterogeneous and off-the-shelf mobile devices and with limited bandwidth conditions while improving productivity and reducing environmental footprint.

It will highlight the implementation of these services:

- Augmentation of the real environment with virtual assets in an industrial context
- Gesture analysis and scene semantics analysis to inject annotations in video streams.
- Audio transcription and voice command to control the immersive environment and document and record the intervention.
- Support and mixing of multiple videos and IoT data sources from non-immersive devices to compose an on-demand immersive collaboration space with augmented data such as industrial data, gesture interpretation, and 3D image insertion, that will meet the front-line technician and expert needs depending on their devices involved.
- Optimization of network bandwidth usage through video and metadata stream orchestration as well as rendering distribution.

1.2.4.2 Pilot 2 – Remote Technical Training

The pilot will demonstrate that VR/AR allow for efficient knowledge transmission in one-to-many situations where the remote instructor can simultaneously help several trainees while referring to physical objects such as industrial equipment.

This pilot will explore the use case of a trainer of a technical learning session being assisted to allow him to deliver remotely a learning session using VR and showing manipulation of a machine to trainees. The immersive collaboration space will enable trainees and trainers to interact in real-time not only between them but also with the machine model.

The use case is based on the training of qualified staff in complex and technical tasks on large and complex machines. The virtualization aspect should allow both face-to-face and remote training.

The main objectives of this training aim at

- The comprehension of the main components of the machine.
- The correct operation of the vehicle in a safe way, linked with its surrounding environment.
- The improvement of the efficiency while using the machine, improvement of the skills and the tuning of the settings.



- The use of the virtual world allows for the simulation of dangerous situations, the collaborative aspect shall allow also to illustrate misuse scenarios of the machine.

1.2.4.3 Pilot 3 – Business meetings

The pilot will demonstrate that VR/MR enriched business meetings allow seamless integration of remote participants and improve productivity.

This pilot will allow us to develop an innovative business meeting support system, integrating several functionalities to improve and enrich the participants' experience. Such a tool will facilitate the integration of remote participants using VR and AR techniques on the one hand, to provide remote users with a perception of visual and auditory immersion close to real presence; on the other hand, to offer a representation of the remote person to the other participants of the meeting.

The following advanced VR features will be made available to reinforce user inclusion:

- Visual and audio immersion of the remote user.
- Modalities such as overlay display for the visualisation of information concerning both the collaboration's participants (name, function, profiles, etc.) and the interaction: subtitle, main topics discussed, recommendation of actions and any other information.
- Filmed or avatar representation of the remote user, with symbolic transcription of the non-verbal communication acts of the remote person who is provided with a panel of predefined actions that are automatically recognized: request to speak, participation in a vote, expression of agreement or disagreement, etc.
- Virtual representation of collaborative tools and artefacts such as board, projection screen and documents.
- Advance added value services will be provided, such as meeting transcription and automatic subtitling as well as document summarization and automatic minutes generation.

2. CALL FOR PROPOSALS

2.1 Objectives

In the 2nd Open Call, CORTEX² will **invest a total of €1.000.000**, which will be aimed at recruiting tech start-ups/SMEs and/or research organisations to co-develop CORTEX² platform.

The objective is to deliver an inclusive XR teleconference platform while involving organisations in the 'Lab-To-Market' stage that will bring new modules and features, enhancing the functionalities and opportunities CORTEX² can provide.



2.2 Open Call #2 design

Open Call #2 **Co-development** aims to recruit tech Startups, SMEs and/or research organisations to participate in the co-development of CORTEX² with the goal to build value-added services based on the CORTEX² framework leveraging their expertise on specific market segments.



Figure 3 - CORTEX² Open Call 2 design.



Table 2 - Open Call 2 characteristics.

Type of application	Target and goal	Expected outcome	# funded projects	Who can apply
Co-development	For tech Startups/SMEs and/or research organisations to participate in the co-development of CORTEX ² : (1) addressing the topics defined by the CORTEX ² team, or (2) open topic submitted by the applicant within the scope of the CORTEX ² objectives.	Build value-added services based on the CORTEX ² framework leveraging third parties' expertise on specific market segments.	10	Single or max 2 entities Startups/SMEs Research organisations Acting as Tech developer(s)/provider(s)

CORTEX² Open Call 2 “Co-development” will provide a maximum of 100 000 EUR per project to fund the development, integration and validation of highly innovative XR, AR technologies. They will contribute to CORTEX² digital XR platform specifically geared to facilitate work and social activities involving physical interaction with the environment and remote objects — from remote assistance or training to working in collaborative spaces.

The selected 3rd parties will be co-building an interdisciplinary community with expertise from the areas of XR, AR, users' providers of videoconferencing, AI, psychology and ethics with the mission of building next-generation extended reality tele-cooperation solutions.

FOR WHO?

This Open Call will finance at minimum one single entity (tech Startup/SME/research organisation) and maximum of two entities representing Technology Developer(s): with emphasis on the XR, AR, AI. The inclusion of the 2nd entity must be justified.



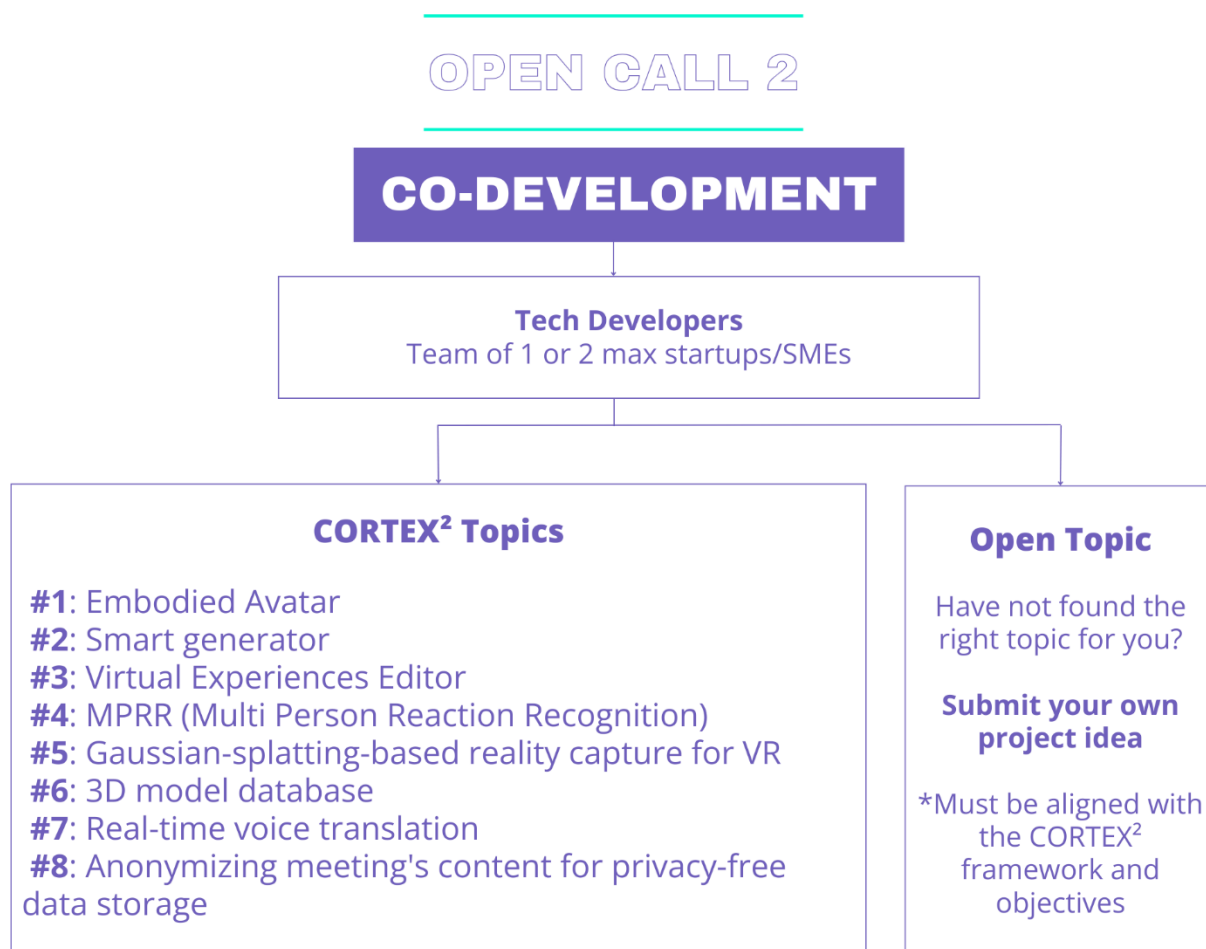


Figure 4 - CORTEX² Co-development design

The expected **result will be 10 innovative projects** which will be run by the selected entities, co-developing and demonstrating the value of CORTEX² technologies.



Table 3 - Co-development programme.

Track 1: CO-DEVELOPMENT				
Sprint name	Duration (months)	Activity	Means of verification	Funding ⁽³⁾ % of the project budget
SPRINT 1	3	Development	<ul style="list-style-type: none"> - Design and integration plan - Deliverables required per selected Topic ⁽¹⁾ - KPIs defined per selected Topic ⁽²⁾ 	40%
SPRINT 2	3	Integration	<ul style="list-style-type: none"> - Minimum demo - List of deliverables per selected Topic ⁽¹⁾ - Listed KPIs ² 	35%
SPRINT 3	3	Validation	<ul style="list-style-type: none"> - Final product and test results - List of deliverables per selected Topic ⁽¹⁾ - Listed KPIs ⁽²⁾ 	25%

¹⁾ The list of deliverables required per selected Topic is available in each Topic description. In the case of the application for **Open Topic**, the applicant must define 3 deliverables, 1 per each sprint.

²⁾ The list of KPIs required per selected Topic is available in each Topic description. In the case of the application for **Open Topic**, the applicant must define a minimum of 3 KPIs, 1 per sprint.

³⁾ Associated with a positive assessment of the required deliverable(s) and KPIs.

List of available Topics for Open Call #2 Co-development

Please choose one of the available **Topics** to apply to the Open Call.

If no fit is found, an applicant can apply to the **Open Topic**, submitting a proposal of work aligned with the Open Call objectives and the 9-month programme distribution. Such applicant must propose their own set of deliverables and KPIs (Table 3).



Table 4 - Co-development Requirements: ethics, security and data management.

Co-development Track Requirements	
Ethics	<ol style="list-style-type: none"> 1. All Artificial Intelligence software or techniques co-developed in the course of CORTEX² must be compliant with the Assessment checklist for trustworthy AI as proposed by the High-level expert group on AI (AI HLEG). The complete document can be retrieved from the website of the European Commission to conduct a self-assessment. Hence, the applicants must conduct a self-assessment to ensure that the proposed solution adheres to the ethical requirements in the assessment list, namely. <ol style="list-style-type: none"> i. Human Agency and oversight ii. Technical robustness and safety iii. Privacy and data protection iv. Transparency v. Diversity, non-discrimination and fairness vi. Societal and environmental well-being vii. Accountability 2. In addition, the applicant must assess the possibility and disclose whether their proposed solutions, software or the techniques have dual use (military application) or are capable of being misused (illegal or unethical purposes or used to violate human rights or compromise the safety of humans, animals or the environment). To this end, the applicant must disclose the capabilities of all co-developed components or software.
Security	The applicant must implement the appropriate privacy-preserving techniques, safeguards, security, measures and mechanisms to ensure the protection of personal data concerning the development, deployment and use phases of the co-developed software components. The applicant must disclose the possible and known risks and vulnerabilities concerning cybersecurity of the co-developed software or components.
Data management	The applicant must outline how data would be collected, generated and/or processed with details of the type of data/metadata they intend to use and the origin of such data, the quality assurance of such data. Details on how the applicant intends to comply with the FAIR data principles (Findable, Accessible, Interoperable, Reusable) must be provided along with storage, security, and re-use plans for such data.

Table 5 - Topic#1 Embodied avatar animation

Topic#1 Embodied avatar animation	
Challenge	Development of application to support the animation of embodied avatar representing the user in 2D or 3D scene either in VR or in augmented reality mode. The purpose is to be able to reproduce some user body and/or face



	animation. Hence the proposals may tackle several or all the features described below: <ul style="list-style-type: none">- Library of predefined body movement for avatar animation in VR environment- Face animation of avatar or picture based on sound, voice (lips animation), gaze tracking (eyes) or emotion detection- Interface and authoring tool for user to train avatars to learn specific body movements and save these movements into a shared library for specific use		
Co-development area	Avatar generation		
Requirements	TRL at the end of the project	Reach TRL7	
	Source code availability	Open source is preferred (but not mandatory)	
	Standards	Avatar and animation standards format (GLB, VRM, Collada, SVG, and OBJ, etc.)	
	Programming language	C# or JS suggested	
	Other(s)	The generated avatars should be Unity3D and webXR-compatible.	
Ideal candidate	SME (gaming) or academia subject-matter expert in avatar animation		
Minimum deliverables required (M-month D-deliverable)	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)
	D1. Specification & test plan	D2. POC (integration in one pilot) +video	D3. MVP and product video D4. End user testing on plausibility of the avatar behaviour and user-study to verify the quality
KPIs	At the end of the project: <u>Avatar animation:</u> <ul style="list-style-type: none">• Male and female avatar animation,• library of movements & number of animations min 4 : walking / seating up and down / raise hand / yes, no, acknowledge,• Emotions: 3 emotions e.g. happy, agree/disagree, upset• Sound based animation: Cough, sneezing, Yawning• <u>Lipsync:</u>• Operational Efficiency: this method should work in real time and with low computation resource• User-preferability: in terms of quality, the user should be satisfied with the output result.• User Diversity and Inclusion: The generalization of the proposed model should be high enough to support all type of voice tones including men, women and also children.		



Resources provided by CORTEX ²	<ul style="list-style-type: none"> • Documentation of CORTEX² framework • An assigned contact person from CORTEX2 consortium • Integration support
Expected outcome	final Full integration of the avatar animation capabilities within one of the 3 Cortex2 pilots.

Table 6 Topic #2 Smart generator

Topic# 2 Smart generator		
Challenge	<p>Real Time AI asset and 3D materials generator empowered by Generative AI.</p> <p>2 possible approaches:</p> <ul style="list-style-type: none"> • It is about creating a framework: Given a Textured 3D mesh of an object generated from multi-view images (using NERFs or SfM methods) the framework should perform either of the two functions: <ul style="list-style-type: none"> ○ 1) The framework should enhance the texture quality of the mesh. (See. RTX Remix) ○ 2) The framework could change the texture details of the mesh using a given textual prompt. (E.g. if a red bottle with blue cap is 3D scanned and the text prompt is "change the red bottle to green bottle", the framework should be able to make the red bottle into green bottle with blue cap. • It is interesting to have the capability of Generating assets in real time with AI in Unity Project. It will be useful on the Cortex² collaborative platform regarding pedagogy, inclusion, and accessibility. PC and VR Users will be able to point out objects, personalize scenes and change colours or objects (furniture, clothes, etc.) in case of sickness like colour blindness or uncomfortable feelings with appearances of objects/subjects (phobia or embarrassment) while they are interacting with each other. <p>We are targeting a tool to extract a 3D object from scan and augment it thanks to Generative AI to increase the fidelity of scanned objects.</p> <p>We want to provide customisable mods to existing assets, like coffee cups, water bottles or other components of the scene that could also extend to adding a logo to a shirt.</p>	
Co-development area	VR interaction	
Requirements	TRL at the end of the project	TRL 7
	Source code availability	Project sample source code integrating its capability in Unity3D



	Standards	Open source is preferred (but not mandatory) - standards format for 3D objects		
	Programming language	Open standards – C# for Unity or JS for WebXR		
	Other(s)	<ul style="list-style-type: none">- Materials and assets should be Unity-compatible considering AI ethics and uses (if censorship is needed)- {Disarmed} generated 3D Objects: no hidden tags or links- No IPR on generated 3D models		
Ideal candidate	SME or academic matter expert on Generative AI for 3D images			
Minimum deliverables required (M-month D-deliverable)	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)	
	D1. Specifications & test plan Asset generation regardless of time, regardless of medium	D2. POC (integration in one pilot) +video Validation and tests with Unity on PC at least	D3. MVP and product video Optimization Unity, dll compatibility with PC + android, low resource generation End-user testing regarding quality of the generated results	
KPIs	At the end of the project: <ul style="list-style-type: none">• Fast generation, low resource consumption, high fidelity photo realistic rendering• Increase the quality or add customisation to one mesh model• Increase the quality or add customisation to many mesh models; the number of mesh models should not be limited (i.e., the framework should be generalisable to any mesh models)• The framework should generate the modified texture + mesh in less than 10 seconds.• The modified mesh model should be able to render at real-time speeds in web-browsers and mobile phones. (the size of the model should also be reasonable for mobile data downloads)• work on generated 3D mesh generated dark environment			
Resources provided by CORTEX ²	<ul style="list-style-type: none">• Documentation of CORTEX² framework• An assigned contact person from CORTEX² consortium• Integration support			
Expected final outcome	<ul style="list-style-type: none">• Improve the results of the 3D scene reconstruction• Have the capability to modify in real time objects in the scene by using textual description.• integration of the avatar animation capabilities within one of the 3 CORTEX2 pilots. The eLearning scenario may be the first one to consider.			



Table 7 – T#3 Virtual experiences editor

Topic #3 Virtual experiences editor			
Challenge	<p>The objective of this topic is to provide end-customers with an easy-to-use creation environment for their industrial or commercial VR/Web 3D applications. Integrating CORTEX2 services in such editing tools will help end-customers easily integrate CORTEX2 capabilities into their use cases. The objective for the editing platform responding to this topic is to integrate CORTEX2 services to make them easily accessible to their customers within their editing interface.</p> <p>The end customers can then create their own customized virtual environments by dragging-and-dropping CORTEX2 services of their selection. All CORTEX2 services could be integrated, for example: Audio/Video collaboration, IoT data and control, Avatarization, AI assistants, hands & gestures, translation, meeting summary, etc...</p> <p>Not all CORTEX2 services should be integrated but a minimum of 5 services offered by CORTEX2 should be integrated in the editor for end-customers to access (using APIs/SDKs from the CORTEX2 platform), with a minimal integration of collaboration and IoT data and actions services.</p>		
Co-development area	VR Interaction		
Requirements	TRL at the end of the project	6	
	Source code availability	Not mandatory.	
	Standards	No specific standards.	
	Programming language	Best usage of CORTEX2 APIs and SDKs.	
	Other(s)	Bi-directional devices and humans' communication between the real and virtual world	
Ideal candidate	<ul style="list-style-type: none">Web3D experiences editing platformIndustrial VR software editors		
Minimum deliverables required (M-month D-deliverable)	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)
	D1. Specification & test plan	D2. User documentation & Demo video	D3. MVP & end-user testing evaluation
KPIs	<ul style="list-style-type: none">Number of CORTEX2 services integrated in the editor (target 5)Number of different browsers and/or VR headsets supported (target 3)Number of environments created and ease of creation (target 5)Mandatory Integration of Collaboration and IoT services Target 5)		



Resources provided by CORTEX ²	<ul style="list-style-type: none"> • Documentation of CORTEX² framework • An assigned contact person from CORTEX2 consortium • Integration support
Expected outcome	final Improve accessibility to CORTEX2 services by allowing end-customers to create their own VR/Web3D environment integrating CORTEX2 services in a low code/no code manner.

Table 8 – T#4 Multi-Person Gesture Recognition (MPRR)

Topic#4 MPRR (Multi-Person Reaction Recognition)			
Challenge	Given a monocular video from a webcam and user type [host, participant] the following features must be available in rainbow. <ul style="list-style-type: none">• Host: Given the webcam video containing a single person, the system should detect the static gestures (mute all participants, thumbs up, thumbs down, question, clap) and dynamic gestures (swipe left/right/up/down, track index finger as a virtual pointer) performed by the person.• Participant: Given the webcam video containing multiple people, the system should detect static gestures (thumbs up, thumbs down, question, clap) performed by each person in the webcam video. The entire solution should run in real-time and on the client’s device.		
Co-development area	Gesture Analysis		
Requirements	TRL at the end of the project	TRL 7-8	
	Source code availability	The third-party solution could be either open-source or developed in-house by the SME.	
	Standards	N/A	
	Programming language	Python, JS, TS, C#, C/C++, Go	
	Security	N/A	
	Data management	N/A	
	Other(s)	Developers may consider using mediapipe framework. The models should run on CPU. On each sprint, a development documentation is required,	
Ideal candidate	Frontend Engineer, Frontend Engineer, Machine Learning Engineer		
Minimum deliverables required (M-month	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)
	D1. Standalone prototype/proof of concept	D2. Integration into CORTEX2 framework	D3. Optimization and real-time setup.



D-deliverable)			
KPIs		<ul style="list-style-type: none"> • Implementation of 5 static and 5 dynamic gestures • Support for at least 10 participants at any instance • Bandwidth consumption of less than 50Mb 	
Resources provided by CORTEX ²		<ul style="list-style-type: none"> • Documentation of CORTEX² framework • An assigned contact person from CORTEX² consortium • Integration support 	
Expected outcome	final	A multi-person hand gesture recognition module for video conferencing which can be used by the host and the participants.	

Table 9 T# 5 Gaussian-splatting-based reality capture for VR

Topic# 5 Gaussian-splatting-based reality capture for VR			
Challenge	<p>The cutting-edge technique of 3D Gaussian Splatting offers a novel approach to real-time rendering and 3D reconstruction. This method involves explicit spatial expression that can achieve rendering at 60 FPS without the loss of integrity and precision commonly associated with mesh grids. Known challenges are large file sizes (ranging from 200MB to 1GB) which can hinder transmission and the effective rasterization in VR environments using Unity.</p> <p>The goal of this topic is to address two primary challenges:</p> <ul style="list-style-type: none"> • Optimizing 3D Gaussian Splatting points to reduce memory needed for data transmission. • Visualization and deployment in Unity for VR headsets. <p>We aim to leverage this technology to expand the possibilities for real-time rendering and 3D reconstruction.</p>		
Co-development area	VR Interaction		
Requirements	TRL at the end of the project	TRL 6-7	
	Source code availability	The third-party solution could be either open-source or proprietary.	
	Standards	N/A	
	Programming language	Python, C++, C#	
	Ethics	The reconstructed scene used for the demo should meet the relevant confidentiality guidelines and not involve human figures	
	Security	N/A	
	Data management	N/A	
	Other(s)	Developers can use existing 3D Gaussian Splatting technology and Unity-based deployment solutions to implement this feature in CORTEX2 framework. On	



		each sprint, a development documentation is required,	
Ideal candidate	Knowledge in: 3D reconstruction, Unity Development, Computer Graphics		
Minimum deliverables required (M-month D-deliverable)	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)
	D1. Local Prototype of Gaussian splatting visualization.	D2. Integration into CORTEX2 framework on VR.	D3. Optimized version with a demo scenario.
KPIs	<ul style="list-style-type: none">Types of visualization devices supported: Desktop or phone (via Web), VR headsetRendering speed > 30 FPSThe size of 3D Gaussian point cloud file < 50 MB		
Resources provided by CORTEX ²	<ul style="list-style-type: none">Documentation of CORTEX² frameworkAn assigned contact person from CORTEX2 consortiumIntegration support		
Expected outcome	final	Supports 3DGS-based rendering for multiple devices in the framework of CORTEX2.	

Table 10 T#6 3D model database

Topic #6 3D model database		
Challenge	Develop a 3D model database system that allows for secure upload and download of 3D models. Multiple formats should be supported. Additional information, such as tags or preview images should also be supported. A clear API or easy-to-use library to retrieve data should exist.	
Co-development area	Scene semantics, modules and services	
Requirements	TRL	TRL 6-8
	Source code availability	N/A
	Standards	N/A
	Programming language	C++, C#, Python
	Ethics	N/A
	Security	N/A
	Data Management	N/A
	Other(s)	For additional processing, such as conversion, not all format features need to be fully supported, e.g. spline types of the .obj file or all possible material configurations. The limitations should be made clear.



Ideal candidate	Experience with database services. Basic experience with 3D file formats and issues with them.		
Minimum deliverables required (M-month D-deliverable)	1st Sprint (M3)	2nd Sprint (M6)	3rd Sprint (M9)
	D1. Proof of concept/standalone solution	D2. Integration into Cortex2 Framework	D3. Full integration documentation and support for XR headsets.
KPIs	<ul style="list-style-type: none"> Processing time of new models (Including conversions, preview generation, meta data, etc.). Less than 5-10 minutes, depending on the model complexity Number of formats supported (minimum 3-4 formats. Required: .obj, .gltf/.glb. Other formats could be .ply, .fbx, ...) Handling of simultaneous requests (at least 15 users) 		
Resources provided by CORTEX ²	<ul style="list-style-type: none"> Documentation of CORTEX² framework An assigned contact person from CORTEX² consortium Integration support 		
Expected final outcome	A 3D model database system		

Table 11 T#7 Real-time voice translation

Topic#7 Real-time voice translation		
Challenge	<p>The challenge in language translation in virtual collaboration context is to be able to preserve the meaning and order of actions to avoid misinterpretation. This is particularly evident in the case of remote assistance or learning via extended reality, where the actions and their order of execution to repair a machine are important. It's not just a case of spontaneous translation, where no damage can occur.</p> <p>The second difficulty is to find the best real-time balance between speech translation and its transformation to text to be presented or played using a synthesized voice.</p>	
Co-development area	Audio transcription	
Requirements	TRL (*)	TRL7
	Source code availability	Open-source models, some of them provided by hugging-face community
	Standards	Inference API
	Programming language	N/A
	Data management	N/A
	Other(s)	<ul style="list-style-type: none"> Requirements are utilizing language models for translation and speech processing techniques.



		<ul style="list-style-type: none">It can be done by obtaining a text out of speech then translation after that again the inverse process. or the more elegant version to doing on the fly without converting to text.There would be three most important technical challenges: 1- Providing a low latency (close to real-time) 2- Accurate translation 3- Proper replication of presenter speech tone for the outputIPR - Open source	
Ideal candidate	Having experience in Language models and Speech processing		
Minimum deliverables required (M-month D-deliverable)	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)
	D1. Translation service functioning design and Proof of concept	D2. Translation service deployment and assessment	D3. Integration within CORTEX2 and validation
KPIs	Operational Efficiency: Real-time performance with low computation power (with as low latency as possible) User Satisfaction and Engagement: The quality of translation and reproduced speech Easy to be integrated to CORTEX2 framework and used by its internal pilots.		
Resources provided by CORTEX ²	<ul style="list-style-type: none">Documentation of CORTEX² frameworkAn assigned contact person from CORTEX2 consortiumIntegration support		
Expected outcome	final	A working translation service with special attention to instructions in communication that explains how to handle or operate an object. French and German are the languages in input and English in output or vice versa.	

Table 12 T#8 Anonymizing meeting's content for privacy-free data storage

Topic#8 Anonymizing meeting's content for privacy-free data storage		
Challenge	<p>Saving meetings data including participants' audio, note and other biometric information is not possible due to privacy issues. However, all these valuable information can be stored and used for different purposes such as data analysis in Psychology, Sociology, Economy, Marketing and etc. By anonymizing personal information, it is still possible to use all this valuable content which already consumed a lot of power and time resources.</p>	
Co-development area	Smart Data	
Requirements	TRL (*)	TRL 6-7



	Source code availability	The third-party solution could be either open-source or proprietary.		
	Standards	GDPR		
	Programming language	Python/C++		
	Data management	The output should be compliant with GDPR		
	Other(s)	Requires expertise in image, speech, and language processing. Visual biometric data, such as face images, must be either deleted or altered to be unrecognizable while preserving the rest of the content intact and usable. Similarly, audio and text data must be anonymized without affecting its usefulness for further analysis. On each sprint, a development documentation is required. An ethical / legal analysis should be conducted (possibly with help of the CORTEX2 consortium)		
Ideal candidate	Having experience in biometric field.			
Minimum deliverables required (M-month D-deliverbale)	1 st Sprint (M3)	2 nd Sprint (M6)	3 rd Sprint (M9)	
	D1. Anonymization prototype for text, audio, image or video	D2. Integration to CORTEX2	D3. Demonstration with proof of anonymization	
KPIs	<ul style="list-style-type: none">- Generalization: Demonstration on at least 10 different unique sessions (with different persons)- Computational load: the solution should work on one standard GPU- At least two modalities should be considered in one session (e.g. audio, video)			
Resources provided by CORTEX ²	<ul style="list-style-type: none">• Documentation of CORTEX² framework• An assigned contact person from CORTEX² consortium• Integration support			
Expected outcome	final	Provide accurate content anonymization technology capable of efficiently handling various modalities (audio, image, video, text).		

3. Eligibility criteria

Applicants will have to abide by all general requirements described in this section to be considered eligible for CORTEX². The eligibility check verifies that:

- Submissions are made **ONLY** through the F6S platform in the space enabled for the CORTEX² Open Call #1 within the defined deadline.
- Applications should be submitted using the following address:
<https://www.f6s.com/cortex2-open-call-2-for-co-developers/apply>



- Applicants are legal entities established in an eligible Horizon Europe Country, as indicated in section **Eligible countries**.
- The Application as well as the requested documents are provided **ONLY** in English language.
- The Proposal description is submitted according to the Guidelines for Applicants and provided templates.
- A minimum of one and a maximum of 2 entities per submitted project are accepted.
- Not exceeding the maximum budget request per application.
- Complete application which includes the requested administrative data, and any obligatory supporting documents specified in the call.

A proposal is only considered eligible if its content corresponds specifically to the requirements of the Topics available of the CORTEX² Open Call #2, including the specific eligibility conditions set out in the relevant parts of the Guidelines for Applicants.

The applications that do not comply with those criteria will be excluded and marked as ineligible.

3.1 Confidentiality and deadline

Any information regarding the proposal will be treated in a strictly confidential manner. Only proposals submitted before the deadline will be accepted. **After the call closure, no additions or changes to the received proposals will be considered.**

Submission to the CORTEX² Open Call #2 is open between the **13th of June 2024, 00:00 CEST** (Brussels time) and the **15th of August 2024 at 17:00 CEST** (Brussels time). Proposals must be submitted before the deadline.

The deadline hour of submission is not flexible, as the online form will be automatically disabled at the day and hour defined as the deadline - Open Call#2 deadline: **15th August 2024 17:00 CEST (Brussels time)**.

To avoid missing the deadline, the applicants are strongly encouraged to submit the proposal as soon as possible.

3.2 Type of Beneficiary (Applicant)

CORTEX² will fund third-party projects that may be from:

- a single entity or a team of 2 entities (acting as technology developers)

These entities are eligible under the following conditions:



- An organization based in the EU or any Horizon Europe associated member state.
- An SME following the EU definition by the [Commission Recommendation 2003/361/EC](#) and in the [SME user guide](#)
- Secondary and higher education establishments, research institutes and other not-for-profit research entities like Foundations, Universities, Associations, NGOs, etc.

IMPORTANT: For-profit companies which are big enough NOT to be considered a SME are **NOT eligible** (ie: big corporates) to receive funding.

3.2.1 SME eligibility

Micro, small and medium-sized enterprises (SMEs) are considered eligible ONLY if complying with the European Commission Recommendation 2003/361/EC and the SME user guide. In summary, the criteria which define an SME are:

- a. The headcount in the Annual Work Unit (AWU) is less than 250.
- b. Annual turnover less or equal to €50 million OR annual balance sheet total less or equal to €43 million.

Startups that do not have yet annual turnover or balance sheets are also considered eligible given that they fulfil the criteria (a) and (b) at submission time.

In addition, the following conditions apply:

- The applying SMEs should not:
 - have convictions for fraudulent behaviour, other financial irregularities, or unethical or illegal business practices.
 - have been declared bankrupt or have initiated bankruptcy procedures.
 - Be under liquidation or an enterprise under difficulty accordingly to the Commission Regulation No 651/2014, art. 2.18
 - Be excluded from the possibility of obtaining EU funding under the provisions of both national and EU law, or by a decision of both national or EU authority
- Proposals must ensure that there is no risk of double funding. The fundamental principle underpinning the rules for public expenditure in the EU states that no costs for the same activity can be funded twice from the EU budget, as defined in Article 111 of Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation.



3.3 Eligible countries

Entities legally established in any of the following countries (hereafter collectively identified as the “Eligible Countries”) are eligible:

- The Member States (MS) of the European Union (EU), including their outermost regions.
- The Overseas Countries and Territories (OCT) linked to the Member States¹.
- Horizon Europe associated countries (Association to Horizon Europe is governed by the Horizon Europe Regulation 2021/695): according to the updated list published by the EC²

The UK applicants are not eligible under the conditions set by the EC for Horizon Europe participation at the time of the deadline of the call.

3.4 Proposal submission

Proposals must be submitted electronically, using the CORTEX² Online Submission Service accessible via the F6S platform at: <https://www.f6s.com/cortex2-open-call-2-for-co-developers/apply>

Proposals submitted by any other means will NOT be evaluated.

3.4.1 Multiple Submissions

This call is competitive. Multiple applications are not recommended, as:

- **ONLY** one proposal per team will be accepted.
- An entity can be granted **ONLY** once.

Note that the regular functioning of the F6S platform limits to one application submission per F6S user in each call.

If an F6S user wishes to submit more than one application, for example on behalf of different legal entities, the F6S user should request support from the F6S support team support@f6s.com at **least 10 days prior the open call deadline**.

3.5 Language

English is the official language for CORTEX² Open Call. Submissions done in any other language will be disregarded and not evaluated.

¹ Entities from Overseas Countries and Territories (OCT) are eligible for funding under the same conditions as entities from the Member States to which the OCT in question is linked.

² https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf



English is also the only official language during the whole execution of the CORTEX² programme for both tracks. This means that it is mandatory that the submission of deliverables is done in English to be eligible.

3.6 Conflict of interest

IMPORTANT: To avoid conflicts of interest, applications will not be accepted from persons or organisations who are partners in the CORTEX² consortium or who are formally linked in any way to partners of the consortium. Please check the list of partners at <https://cortex2.eu/team/>

Applicants shall not have any actual or/and potential conflict of interest with the CORTEX² selection process and during the whole project. The winning applicants will be required to declare that they know of no such potential conflicts of interest by submitting **ANNEX 3 - CORTEX2 Declaration of Honour** during the contracting phase.

All suspected cases of conflict of interest will be assessed case by case. In particular, applicants must take all measures to prevent any situation where the impartial and objective implementation of the project is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest ('conflict of interests').

4. HOW TO APPLY?

The submission will be done through the F6S platform at: <https://www.f6s.com/cortex2-open-call-2-for-co-developers/apply>

The link is directly linked to the [project website](#). The applicants are required to register a profile at F6S to submit a proposal. The templates to the Open Call 2 documents are available here: <https://cortex2.eu/open-calls/open-call-2/>

These are:

- **Annex 2 Application Form at F6S:** The form is extracted as document for reference purposes only. The Application form should be directly filled at the F6S platform.
- **Annex 2.1 Proposal Template:** a document that must be submitted in a pdf format containing the description of the proposed project and uploaded as part of the application form at the F6S platform.
- **Annex 3 Declaration of Honour:** a template of the declaration of no conflict of interest and that all conditions related to the CORTEX² Open Call #1 are accepted by the applying entity(ies). Upon acceptance of their proposal for funding, the signed and stamped declaration must be submitted.
- **Annex 4 SME Declaration:** Check section **3.2.1**. Upon acceptance of their proposal for funding, the signed and stamped declaration must be submitted.

The project proposals must strictly adhere to the F6S application form, which defines sections, required Annexes, and the overall length. Participants are requested to carefully read and



follow the instructions in the form. Additional material, which has not been specifically requested in the online application form, will not be considered for the evaluation of the proposals and may be subject to withdrawal from the evaluation.

Applying to an open call takes time and dedication and we would like to make sure that you understand the crucial rules:

- **Be on time:** Make sure you submit your proposal through the F6S platform before the deadline of **15 August 2024, 17:00 CEST**. If you submit the form correctly, the system will send you a confirmation of your submission (please check your SPAM folder as well). Proposals submitted by any other means are ineligible, hence will not be evaluated.
- **F6S application:** The F6S platform allows you to work flexibly on the content, which is automatically saved once you progress filling out the form.
- **Be exhaustive:** Have you answered all the sections of the form and uploaded all required Annexes? It will not be possible to add any information after you submit your application or reach the submission deadline.
- **Every question deserves your attention:** All sections of your proposal must be filled in. Make sure that the data provided is true and complete. This is crucial for us to properly assess your proposal.
- **Documentation format:** Any document requested in any of the phases must be submitted electronically in PDF format without restrictions for printing.

NOTE 1: It is strongly recommended to not wait till the last moment of submission. **Failure of the Proposal to arrive in time for any reason, including communications delays, or network issues is not acceptable as an extenuating circumstance and will automatically lead to rejection of the submission.**

The time of receipt of the proposal as recorded by the submission system will be definitive.

NOTE 2: Please note that after application submission, editing is not possible. If the applicant discovers an error in the proposal and provided the call deadline has not passed, the applicant may request the Open Call CORTEX² team to re-submit the proposal (for this purpose please contact us at opencall@cortex2.eu with a message titled: RESUBMISSION REQUEST). However, CORTEX² is not committed that resubmission in time will be feasible in case the request for resubmission is not received by the Open Call CORTEX² team at least 48 hours before the call deadline.

5. EVALUATION PROCESS

The evaluation process is shown in **Figure 5**.



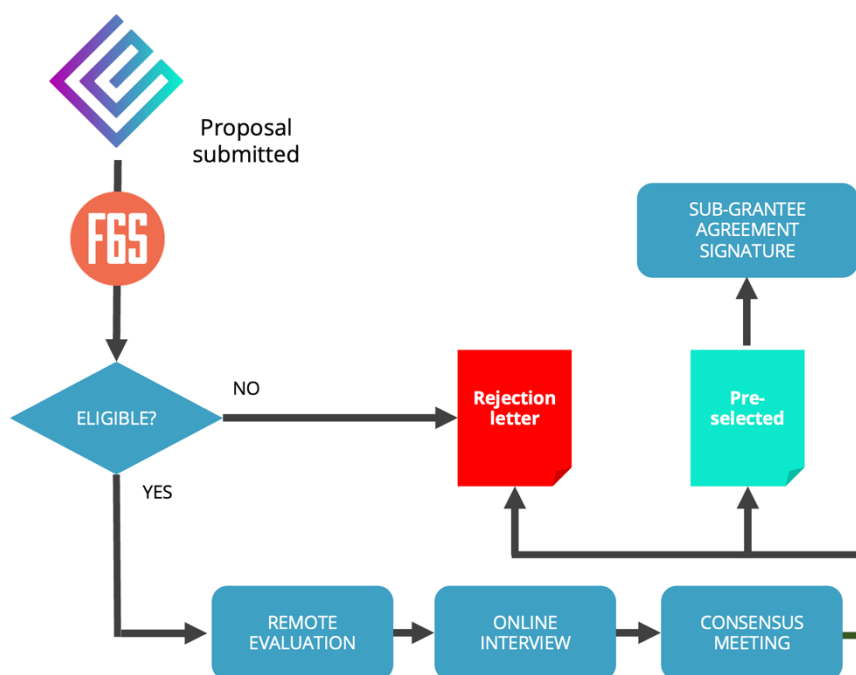


Figure 5 - Evaluation process.

5.1 Step 1- Eligibility Check

Eligibility to participate in the funding programme is initially verified against several eligibility criteria. This process is carried out by the CORTEX² team. A proposal may be declared ineligible or inadmissible at any stage. The check will verify:

- **Proposals reception:** via F6S and by the defined deadline.
- **Eligibility filter:** Eligibility check will verify the existence of a legal entity in an eligible country, the uniqueness of the Proposal, the existence of the same entity in other proposals, the alignment with CORTEX² call for Proposals, and any conflict of interest.

In addition, the following information will be checked:

- All entities are eligible for EC funding under the rules of Horizon Europe [Y/N]
- For profit organizations are not big companies [Y/N]
- The application is submitted by a minimum of 1 and a maximum of 2 partners [Y/N]
- The proposed project is aligned to the Open Call 2 objectives [Y/N]
- The Proposal is written in English [Y/N]
- All required documentation as Annex 2.1, are submitted correctly [Y/N]
- The Proposal does not exceed the maximum available funding



- The proposal does not exceed the maximum page length

The eligible Proposals will be given to external evaluators to initiate the remote evaluation. The non-eligible applicants will be informed by email. **No additional feedback will be given.**

5.2 Step 2 - External remote evaluation

Proposals considered eligible will move on to the external remote evaluation phase. The external evaluation will be done remotely by expert evaluators. Evaluators will be selected from a pool of experts that will be established through a call for expressions of interest. The experts will be evaluated and selected based on their knowledge of the CORTEX² challenges topics and general experience in the evaluation of proposals (e.g., Horizon 2020, HE, FSTP programmes). Expert profiles will be evaluated, and a pool of experts will be established. The top-ranked experts will be invited to evaluate proposals.

The evaluators will perform evaluations on an individual basis, not as representatives of their employer, their country, or any other entity. They are required to be independent, impartial, and objective. All evaluators are required to sign a contract, which includes a declaration of confidentiality and the absence of conflicts of interest. Any known conflict of interest will be immediately communicated to the CORTEX² Open Call team. Evaluators will also be bound by strict confidentiality regarding the evaluation process and during the evaluation process.

At least two external evaluators will evaluate each proposal and will be distributed across the proposals based on their expertise and, whenever possible, country of origin.

5.2 Evaluation criteria

The evaluators will follow the 4 evaluation criteria listed in **Table 13**.

The independent experts will score each award criterion on a scale from 0 to 5 (decimal point scores may be given):

- **0 = Fail:** The proposal fails to address the criterion or cannot be judged due to missing or incomplete information.
- **1 = Poor:** criterion is inadequately addressed or there are serious inherent weaknesses.
- **2 = Fair:** proposal broadly addresses the criterion, but there are significant weaknesses.
- **3 = Good:** proposal addresses the criterion well, but a few shortcomings are present.
- **4 = Very good:** proposal addresses the criterion very well, but a small number of shortcomings are present.
- **5 = Excellent:** proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.



The score (including for each criterion) is calculated based on the average of the scores provided by the evaluators. The **threshold for each criterion is three (3)**, and the overall score threshold is 12. This indicates that if a proposal scores less than 3 in any criterion or an overall score less than 12, the proposal is automatically rejected.

Each evaluator will record his/her individual assessment of each proposal using an Individual Evaluation Report (IER). The evaluators will hold a consensus meeting to prepare a single consensus Evaluation Summary Report (ESR) for each proposal, representing opinions and final scores on which the evaluators agree and which they will sign.

Table 13 - CORTEX2 Open Call #2 evaluation criteria

CORTEX ² Open Call #2 evaluation criteria		
Remote Evaluation Criteria	Co-development	Threshold
	Scope of evaluation	
Technical Excellence	<ul style="list-style-type: none"> • Level of innovation and technological challenges addressed. • Concept fit to the call track and the 9-month programme; • Application must demonstrate a clear set of technical objectives per selected Topic of application. • Quality, credibility, and clarity of the technical description of how to achieve the objectives. • Level of integration with CORTEX² technologies to test and validate. • Feasibility of the proposed work and technological contribution. 	3/5
Ambition & Impact	<ul style="list-style-type: none"> • Applicants must define their ambitions and a clear set of expectations aligned with the objectives of the Call Track 1. • Proposals must demonstrate impact on the CORTEX² framework and its contribution to the XR ecosystem. • Overall impact of the proposed project if successful. • XR Industrial relevance and exploitation plans. • Gender/accessibility/inclusion impact addressed, if applicable. • Quality of the exploitation plan and market potential. • Effectiveness of the proposed measures to exploit and disseminate. • Potential of the outcomes to be adopted/used by other entities into regular practices 	3/5
Team Skills & Expertise	<ul style="list-style-type: none"> • Quality of the entity (ies). • Clarity of each partner role, if applicable. • Technical capacity and excellence of the technology developer/provider. • Quality of the individual participants competences. 	3/5
Project Planning &	<ul style="list-style-type: none"> • Quality, effectiveness and clarity of project activities, structure, and timing. • Appropriateness of deliverables, KPIs and means of verification. 	3/5



Value for Money	<ul style="list-style-type: none"> • Allocation of appropriate resources to the proposed project. • Justification of the proposed resources and their deployment. 	
------------------------	---	--

5.3 Step 3 - Intermediate ranking of proposals

At the end of the evaluation process (Step 2), all proposals will be ranked. The primary rule for ranking proposals will be based on their overall average score (summary of criterion 1 to 4), while considering the minimum and maximum number of proposals to be selected. In case there is an insufficient number of proposals for all Topics (total or that have not met the threshold), the top-ranked proposals from existing Topics will be selected. In the case there are proposals in the same position, tie-breaks will be addressed by giving priority to the proposals with the highest score in specific criteria, considering the following order:

- Rule 1: Proposals will be ranked based on their overall score (sum of scores for criteria 1 to 4).
- Rule 2: After applying Rule 1 and if there are proposals in the same position, priority will be given to proposals that have the highest score on Ambition & Impact.
- Rule 3: After applying Rule 2 and if there are proposals in the same position, priority will be given to proposals that have the highest score on Technical Excellence.
- Rule 4: After applying Rule 3 and if there are proposals in the same position, priority will be given to proposals that have the highest score on Team Skills & Expertise.
- Rule 5: After applying Rule 4 and if there are proposals in the same position, priority will be given to proposals that have the highest score on Project Planning & Value for Money.
- Rule 6: After applying Rule 5 and if there are proposals in the same position, priority will be given to those addressing gender/accessibility/inclusion impact.

The top-ranked proposals – at least 14 of proposals will be invited to an online interview. Furthermore, at least 1 proposal within each Topic (if their score meets the minimum threshold) will be invited to the online interview. This applies in the case that proposals have been submitted to all Topics.

5.4 Step 4: Consensus meeting

Evaluators involved in the remote evaluation will carry out a consensus meeting with the objective of gathering their evaluations, defining a common score for the proposals, and preparing evaluation reports.

5.5 Step 5: Online interview

The objective of the interview is to better understand the proposal, particularly its quality and excellence, the expected impact and exploitation potential, quality of the workplan, and quality



of the applicant(s). Any complementary material that can support the presentation of the project is acceptable during the interview. Interviews will be carried out by a selection of the internal evaluators. Members of the CORTEX² team directly involved in the selected Topic that each Proposal is addressing will participate in the interview and respective evaluation process. Interviews are expected to last approximately 30-45 min. The Applicants are expected to prepare and present a presentation (approximately 15 minutes) and answer any questions regarding their proposal from the internal evaluators. For applications where potential ethical considerations were identified in previous evaluation stages, an ethical expert from the consortium will be invited to the interview to assess these aspects. At least 2 evaluators are expected to participate in each interview.

The online interviews will evaluate proposals against the following evaluation criteria:

Table 14 - Interview evaluation criteria.

Interview criteria	Description
Concept Innovation &	<ul style="list-style-type: none"> Alignment with/ contribution to CORTEX² (Topic/Domain) and its ecosystem. Quality and novelty of the proposed project concept and innovation (technology focused).
Impact Exploitation &	<ul style="list-style-type: none"> Impact on the XR ecosystem. Path towards exploitation/market of results.
Workplan Applicants &	<ul style="list-style-type: none"> Rationale and ambition of the workplan. Capacity and experience of the applicant. Any risks and mitigation plans. Rationale of the project budget and resources.

Internal evaluators will score each criterion between 0 and 5. If at any time during the interview the applicants do not commit to what was included in the submitted proposal, the proposal will be automatically disqualified. If after the interview process the evaluators still have questions, the applicant may be requested to provide additional information in writing.

5.6 Step 6: Final ranking and selection

After the online interview process, all proposals will be ranked according to the average scores obtained from (1) the external remote evaluation and (2) the online interviews.



Ten proposals will be selected.

The proposals with higher scores will be selected until reaching the available funding. However, the CORTEX² Consortium is not obliged to select the highest scoring proposal where it has objective grounds for objecting to the participant if, for example, commercial competition issues or strategic issues to balance technologies between the different platforms available in CORTEX² become apparent during the evaluation process. In this case, the choice may pass to the next ranked proposal.

All eligible Proposals will receive an acceptance or rejection letter together with an anonymised version of their Evaluation Summary Report (ESR). Proposals not having passed to the online interview stage will receive a report with results of the external remote evaluation. Proposals that passed to the online interview will receive a report with information from both the remote evaluation and interview stages.

5.6 Redress process

An applicant may submit a request for redress if they believe the results of the eligibility checks have not been correctly applied, or if they feel that there has been a shortcoming in the application of the rules of the CORTEX² - Open Call #1. Requests for redress must:

- Be received within three (3) working days from the reception of (1) a rejection letter considering the proposal as non-eligible or (2) the ESR information letter.
- Indicate the subject of the complaint and clearly describe it, with arguments/ evidence that sustain the complaint.
- Be sent by the entity's legal representative that has also submitted the proposal. In case a request for redress is received, an internal review committee from CORTEX² will examine the applicant's complaint. The committee will review the complaint and recommend an appropriate course of action. If there is clear evidence of a shortcoming that could affect the eventual funding decision, it is possible that all or part of the proposal will be re-evaluated.

Please note:

- This procedure is concerned only with the eligibility/ evaluation organisation process.
- The committee will not question the scientific or technical judgement of the expert evaluators applied in evaluating the proposals.
- A re-evaluation will only be carried out if there is evidence of a shortcoming that affects the final decision on whether to fund the proposal or not.
- The evaluation score following any re-evaluation will be regarded as definitive. It may be lower than the original score.
- Anonymous or incomplete complaints will not be considered.



- Only one request for redress per Proposal will be considered by the committee. All requests for redress will be treated in confidence and must be sent to CORTEX² at: opencall@cortex2.eu

6. CONTRACTING

6.1 Sub-granted project negotiation and onboarding

At the end of the evaluation phase, ten proposals will be selected. The other proposals that were invited to the interview stage will remain on a reserve list in case one of the selected proposals fails to sign the sub-grant agreement.

6.2 Contract preparation

After the Open Call evaluation conclusion and project selection, the CORTEX² coordinator will start the contract preparation in collaboration with the selected proposals' coordinators. Contract preparation will go via administrative and financial checking (and potentially into technical or ethical/security negotiations) based on evaluators' comments. On a case-by-case approach, a phone call or teleconference may be needed for clarification.

The objective of the contract preparation is fulfilling the legal requirements between CORTEX² Consortium and every beneficiary of the call. The items covered will be:

1. Inclusion of the comments (if any) in the ESR of the Proposals and mapping to the Sub-grant agreement (Contract).
2. Validation of the legal documents

The objective of the contract preparation is to fulfil the legal requirements (**Table 15**) between the CORTEX² consortium and each beneficiary of the open call.

Note: the contract as provided to the sub-grantee is final and may not be changed, including the addition or removal of any articles or other content. All documentation that requires a signature (e.g., Declaration of Honour, SME Declaration (if applicable), Bank Account, and sub-grant agreement must be signed by hand (e.g., with the same signature on the identity card) or with a valid electronic digital signature. CORTEX² reserves the right to request one or the other types of signatures for specific documentation.

Table 15 - Requirements for contract preparation.

Legal requirement	Description
Proof of legal existence	Company register, official journal or other official document per country showing the name of the organisation, the legal address and registration number and a copy of a document proving VAT registration (in case the VAT number does not show on the registration extract or its equivalent)



Specific to SMEs

1. Proof of the SME condition is required:

- If the applicant has been fully validated as an SME on the Beneficiary Register Participant Portal, the PIC number must be provided.
- If the applicant has not been fully validated as an SME on the Participant Portal, the following documents will be required to prove the status as an SME:
 - SME Declaration (**Annex 4**) signed (with a valid e-signature or by hand) and stamped: In the event the beneficiary declares being non-autonomous, the balance sheet and profit and loss account (with annexes) for the last period for upstream and downstream organisations is required.
 - Status Information Form, which includes the headcount (AWU), balance, profit & loss accounts of the latest closed financial year and the relation, upstream and downstream, of any linked or partner company.

2. Supporting documents. In cases where either the number of employees or the ownership is not clearly identified: any other supporting documents which demonstrate headcount and ownership such as payroll details, annual reports, national regional, association records, etc.

Declaration of Honour (Annex 3)	Signed declaration that all conditions related to the CORTEX ² Open Call #1 are accepted by the applying entity (s).
Sub-grant agreement (Annex 5)	Signed between the CORTEX ² consortium, represented by its coordinator (DFKI), and the beneficiary. The sub-grant agreement will also include the comments (if any) of the proposal's ESR to the work plan.
Bank account information (Annex 6)	The account where the funds will be transferred will be indicated via a specific form signed by the entity, individuals, and the bank owners. The holder of the account will be the entity/ individual.

It should be emphasised that each SME should provide at contract preparation time a valid VAT identification number. Failure to provide the VAT³ number will automatically result in proposal rejection.

The request, by CORTEX² Consortium, for the above documentation will be done within predefined deadlines. In general, the sub-project negotiation should be concluded within 2 weeks. An additional week may be provided by the CORTEX² coordinator in case of significant reasoning. In case contracting has not been concluded within the above period, the Proposal is automatically rejected and the next proposal on the reserve list is invited.

³ To be checked at European Commission services such as http://ec.europa.eu/taxation_customs/vies/



6.3 Contract signature

At the end of the contracting phase, the sub-grantee funding agreement will be signed between the CORTEX² Consortium represented by its coordinator (DFKI), and the selected beneficiary, represented by its leader.

In case of applying consortia, the consortium leader and the other consortium partners are responsible to make an agreement that shall cover the rights and obligations between them.

7. ACTIVITIES DURING THE FUNDED PROGRAMME

7.1 CORTEX² 9-month programme for third party co-development projects

7.1.1 Sprint 1

Sprint 1 is associated with the starting point of each project and will have a maximum duration of 3 months. Within this phase, the beneficiary must fine-tune their planning and technology usage with CORTEX², design a detailed development plan aligned with the CORTEX² objectives and perform their technical developments.

The Development sprint should include the following:

- Description of how the project will be carried out.
- Description of the technologies to use.
- Reporting of the technical development.
- List of detailed milestones and KPIs to achieve (metrics and target values for how the success will be determined).

At the end of Sprint 1, Beneficiary(ies) will have to deliver the assigned deliverable as a means of verification of work performed. It must include a publishable summary of the results obtained at this stage. A specific report can be requested by the CORTEX² team.

7.1.2 Sprint 2

Within this sprint, projects will perform their integration to achieve what has been previously developed. The Beneficiary(ies) should consider the following:

- Reporting of the implementation.
- Configuration of units and software.
- Reporting of the operation initiation.
- Reporting of technology deployment by the end-user.
- Collection of relevant data.



- Project performance (in terms of quantitative KPIs identified in the previous phase).
- Proof that the CORTEX² tech offering has been used and integrated for the project purposes.
- Provide a Demo (including a video to be published on the CORTEX² YouTube channel).

At the end of the Sprint 2, Beneficiary(ies) will have to deliver the assigned deliverable as a means of verification of work performed. It must include a publishable summary of the results obtained at this stage. A specific report can be requested by the CORTEX² team.

7.1.3 Sprint 3

Sprint 3 is critical to leverage the results of the previous Sprints. The aim is to validate the co-development performed and foster the exploitation of project results. Within this phase, projects must focus on the validation, assessment, and exploitation of results/achievements. The assessment and exploitation should include the following:

- A demonstrator and a report on the developed feature.
- For exploitation: a business plan for the exploitation of the result.
- Presentation of the final module with a documentation.
- Validation of the source code of the final product, if applicable.
- Upload the source code on a repository on git, if applicable.

At the end of Sprint 3, Beneficiary(ies) will have to deliver the assigned deliverable as a means of verification of work performed. It must include a publishable summary of the project's results and feedback to the obligatory Impact Assessment that will be run by the Open Call management. A specific report can be requested by the CORTEX² team.

7.2 Evaluation

The milestones, KPIs and deliverables will be evaluated at the end of each Sprint. A remote review will take place after each phase to evaluate the progress of the Beneficiary(ies).

The sub-granted project must submit to the CORTEX² consortium the deliverable(s)/report(s) corresponding to each Sprint by the last calendar day of the respective Sprint/Phase, unless otherwise indicated by the CORTEX² consortium.

The review will be remote via a teleconference platform. The Beneficiary will make a presentation of the work done, analyse the progress and answer questions from the CORTEX² experts.



After the review, the Beneficiary will receive a review report, including comments and potential recommendations. The report will also state if the deliverables are accepted or not. On acceptance of the deliverables, payments will be released no later than thirty (30) natural days after the notification by the Contractor.^[1]_{SEP}

On rejection of any of the deliverables, or in case of a not satisfactory review, the Beneficiary(ies) will be requested to re-submit improved deliverables. Based on that update, the CORTEX² experts will take decision if the project can continue to the next Phase, or if the risk of failure is too high. If the rejection of a deliverable or an unsatisfactory review happens in the last Sprint (3) the CORTEX² Consortium will consider if a short extension can be allowed to invite a project to update and resubmit deliverables, hence qualifying for its payment, if and when said deliverable is approved.

7.3 Participation in events

During the three Sprints, the selected Beneficiary(ies) should participate in various types of events (audio calls, video calls, webinars, online training, virtual conferences, etc.) organized or suggested by the CORTEX² Consortium, to support the integration of their solution in the CORTEX² framework, extend their knowledge on the CORTEX² project, XR-related technologies, and its market.

8. Resources and tailored support provided within CORTEX² Assistance Programme

Within the duration of the programme each Beneficiary will be appointed a **mentor** and a **monitor**.

The mentor is an individual, from the CORTEX² consortium with expertise in the topics and solutions being addressed within the project. The mentor will be responsible for supporting, providing feedback, motivating, and evaluating the Beneficiary.

Specifically, the mentor will:

- Organise regular calls with the assigned project (e.g., once every month or as agreed with the mentor).
- Ensure that the work plan, deliverables, and project reports are delivered on time.
- Follow the project's progress towards achievement of defined KPIs and results (sub-granted project progress).
- Provide a technical evaluation of the deliverables and reports submitted by the Beneficiary, including approval, rejection, or request for improvements.
- Engage with other CORTEX² partners to discuss needs from the sub-granted project.

The monitor acts as an administrative contact during the implementation of the project. The monitor will liaise with the sub-granted project's assigned mentor to ensure its successful implementation.



Specifically, the monitor will:

- Monitor the progress of the project with the support of a monthly survey.
- Liaise with the project's monitor about the progress of the respective project and discuss any issues arising in the monthly survey.
- Collect the deliverables and reports from the beneficiary and share them with the respective mentor for evaluation.
- Organize the reviews at the end of each Sprint/Phase.
- Report to the CORTEX² coordination with progress for reporting purposes.

In addition to the recurrent monitoring and mentoring, CORTEX² will also provide the projects with tailored support with the objective of maximising the exploitation and commercialisation potential of the projects, such as:

- CORTEX²- Rainbow Multimodal Collaborative Platform - administration, cloud hosting and open API.
- Tailored expert support depending on the selected co-development Topic.
- Integration and validation support.
- Dissemination of achievements.

8. FINANCIAL SUPPORT PROVIDED

8.1 Financial support

Each selected project is eligible to receive a grant of up to 100,000 EUR. For accessing the funding, the third-party projects deployment needs to demonstrate and present proofs of their progress and achievements and the deliverables presented must be assessed positively in each of the stages. In case of missing the above, the third parties are not paid and may be requested to not participate longer in the CORTEX² project.

The grant received by the third parties is to finance:

- Work performed by employees of the third-party.
- Investment in software/ hardware (only the value associated with its depreciation).
- Travels associated with the project deployment or CORTEX² activities.
- Participation in events/ conferences and promotion campaigns associated with CORTEX²
- Minor (<15%) subcontracting of non-key domain expertise is allowed but must be justified.



The selected 10 projects will become part of CORTEX² activities for the 9 months period composed of 3 Sprints. Payments will be done in 3 instalments (40% + 35% + 25%) based on concrete results, deliverables, and review of each Sprint. Summary of funding:

Table 16 Payment distribution

Programme Sprint	Duration	Funding	Example of €100.000
SPRINT 1	3 months	40%	€ 40.000
SPRINT 2	3 months	35%	€ 35.000
SPRINT 3	3 months	25%	€ 25.000

Detailed payment schedule and payment conditions will be settled in the [Sub-grant \(Beneficiary\) Agreement \(Annex 5\)](#).

9. RESPONSIBILITY OF BENEFICIARIES

The selected third-party is indirect Beneficiary of the EC funding. As such, they are responsible for the proper use of the funding and ensure that the recipients comply with obligations under Horizon Europe specific requirements as described in Horizon Europe.

9.1 [Data protection and confidentiality](#)

During the implementation of Open Call 1 activities and for four years after the end of the programme activities, the Beneficiary(ies) must keep confidential any data, documents, or other material (in any form) that is identified as confidential at sub-contract signature ('confidential information').

The selected Beneficiary(ies) may disclose confidential information to the CORTEX² Consortium and to the selected reviewers, who will be bounded by a specific Non-Disclosure Agreement.

9.2 [Promoting action and giving visibility to the EU funding](#)

The selected Beneficiary(ies) must promote the programme activities, the CORTEX² project and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner and to highlight the financial support of the EC. Detailed requirements will be listed in [sub-grant Agreement \(Contract\) – Annex 5](#).

Any publicity made by selected third-party in respect of the project, in whatever form and on or by whatever medium, must specify that it reflects only the author's views and that the EC or CORTEX² project is not liable for any use that may be made of the information contained therein.



The EC and the CORTEX² Consortium shall be authorised to publish, in whatever form and on or by whatever medium, the following information:

- the name of the selected project members;
- contact address of the selected project;
- the general purpose of the project;
- the amount of the financial contribution foreseen for the project; after the final payment, and the amount of the financial contribution received;
- the geographic location of the activities carried out;
- the list of dissemination activities and/or of a patent (applications) relating to the foreground;
- the details/references and the abstracts of scientific publications relating to the foreground and, if funded within CORTEX² project, the published version or the final manuscript accepted for publication;
- the publishable reports submitted to CORTEX²;
- any picture or any audio-visual or web material provided to the CORTEX² in the framework of the project.

10. INTELLECTUAL PROPERTY RIGHTS

When participating in the CORTEX² project, successful applicants will enter a co-creation process with the current partners of the CORTEX² consortium. In the case where the applicant produces a software, data, know-how or information independently on any other partner, the applicant will remain the sole owners of their respective IPR. In case of co-creation with multiple partners, an IPR co-creation is applied where generation IPR will be established through the joint efforts of multiple parties.

Each Beneficiary shall bear sole responsibility for ensuring that its acts within the project do not infringe third party property rights. Therefore, there is no obligation to conduct research with regard to the property rights of third parties.

In [Annex 5](#), applicants shall identify their Background for the Project and should also, where relevant, informed the CORTEX² consortium that access to specific Background is subject to legal restrictions or limits.

During implementation, access rights to results of the project and Background needed for the performance of the own work of a party under the project shall be granted on a royalty-free basis, unless otherwise agreed for Background in [Annex 5](#).



For the exploitation, access rights to results if needed for exploitation of a party's own results shall be granted on fair and reasonable conditions and upon prior written agreement. Access rights to results for internal research and for teaching activities shall be granted on a royalty-free basis.

The CORTEX² Consortium itself will not retain an equity stake in any applicant's company, nor will it retain any IPR. However, the CORTEX² Consortium will be granted the right to make internal use of any IPR applicants produce as part of their CORTEX² Open Call activities.

CORTEX² and the European Commission may ask participants who have received funding to present their work as part of public relations and networking events to showcase the benefits of the CORTEX² project.

11. Checklist

- 1) **Does your planned work fit with the call for proposals?** Check that your proposed work does indeed address the Open Call 2 objectives
- 2) **Is your proposal eligible?** The eligibility criteria are given in chapter 3 "Eligibility Criteria". Any proposal not meeting the eligibility requirements will be considered ineligible and will not be evaluated.
- 3) **Budgetary limits.** Check that you comply with any budgetary limits as expressed in chapter 8 "Financial support provided".
- 4) **Is your proposal complete?** Have you completed all mandatory questions?
- 5) **Does your proposal fulfil the requested information?** Proposals should be precise, and concise and must answer to requested information, which is designed to correspond to the applied evaluation. Omitting requested information will almost certainly lead to lower scores and possible rejection.
- 6) **Have you maximised your chances?** There will be strong competition. Therefore, edit your proposal tightly, and strengthen or eliminate weak points.
- 7) **Have you submitted your proposal before the deadline?** It is strongly recommended not to wait until the last minute to submit the proposal. Failure of the proposal to arrive in time for any reason, including network communications delays, is not acceptable as an extenuating circumstance. The time of receipt of the application as recorded by the submission system will be definitive.
- 8) **Have you provided the necessary annexes?** Pdf of Annex 2.1 Proposal Template uploaded as part of the application filled in on the F6S page
- 9) **Do you need further advice and support?** You are strongly advised to communicate with the CORTEX² team.



12. Contact

The CORTEX² Consortium serves the following support:

- F6S Online Q&A: <https://www.f6s.com/cortex2-open-call-2-for-co-developers/discuss>
- F6S support team: support@f6s.com
- Open Call #2 Documents: <https://cortex2.eu/open-calls/open-call-2/#documents>
- More info at: <https://cortex2.eu/open-calls/open-call-2/>

For extraordinary communication need, please contact the Help Desk: opencall@cortex2.eu

