**AGREEMENT OF COLLABORATION**

**Intelligent Health Promotion Service System**

(hereinafter also referred to as the “Agreement”)

Parties to the Agreement:

1. Name / Company **EMBITRON, s.r.o.**

Registered Office: Vochov 290, 33023 Plzeň - sever

Company ID: 26361175

Tax ID: CZ26361175

Registered: in the Commercial Register maintained by the Regional Court in Plzeň, Section C, Insert 15348

Represented by: Ing. Karel Kraus, MBA - managing director

(hereinafter also referred to as the **“Czech Participant”**)

1. Name / Company: **Metal Industries Research & Development Centre (MIRDC)**

Registered Office: Kaonan Highway 1001, Kaohsiung City, 81160, Tchaj-wan

Tax ID: 83300307

Represented by: Dr. Tsung-Chih Yu

(hereinafter referred to as the **“Taiwan Participant”**);

1. Name / Company: **National Cheng Kung University (NCKU)**

|  |
| --- |
| Registered Office: University Road 1, Tainan City, 701, Tchaj-wan |

Tax ID: 69115908

Represented by: Prof. Yang-Cheng Lin

(hereinafter referred to as the **“Taiwan Participant”**);

1. Name / Company **Technical University of Liberec (TUL)**

Registered Office: Studentská 1402/2, 461 17 Liberec

Company ID: 46747885

Tax ID: CZ46747885

Represented by: doc. RNDr. Miroslav Brezezina - rector

Person Responsible for the Contractual Relationship: doc. Ing. Josef Černohorský, Ph.D.

(hereinafter also referred to as the **“Further Czech Participant”**)

1. Name / Company **Czech Technical Univiresity in Prague, CIIRC (CTU)**

Registered Office: Jugoslávských partyzánů 1580/3, 16000 Praha 6

Company ID: 68407700

Tax ID: CZ68407700

Represented by: Mgr. Ondřej Velek, Ph.D. – managing director

(hereinafter also referred to as the **“Further Czech Participant”**)

(collectively referred to as the **“Parties to the Agreement”**)**.**

I.

**Subject of Agreement**

1. The subject of this Agreement is collaboration among the Parties to the Agreement with an aim to facilitate the implementation of the ”**Intelligent Health Promotion Service System**“ project (hereinafter referred to as the “Collaboration”), determine terms and conditions, activities and other rights and obligations of the Parties during the term of the Collaboration and the provision of the following intellectual property: See VI.2.
2. The main objective of the project is to develop an integrated smart orthosis solution with a multi-sensor system for motion data collection, which will be used both by doctors for evaluation of the rehabilitation process and by patients for feedback and motivation through serious games. The intended use is in long-term home rehabilitation, particularly for the aging population diagnosed with sarcopenia and possibly dementia. The software will enable quantitative evaluation of the rehabilitation process in the long term. The aim is to develop the system in a Czech-Taiwanese cooperation and thus open up the possibility of accessing larger foreign markets. This new technology is conceived as a global business project, with at least English, Taiwan and Czech language versions envisaged.
3. The subject of this Agreement also includes determining the ownership of Collaboration results arising from this Agreement.

II.

**Collaboration Management and Implementation**

Responsibility for project investigation on the Czech side shall be borne and general coordination and work management conducted by **Ing. Karel Kraus, MBA**., the Principal Investigator of the project on the Czech Participant’s beneficiary side (hereinafter referred to as the “Principal Investigator “). The Principal Investigator shall be directly reported to by xxx. and xxx, the investigators on the Further Czech Project Participant sides (hereinafter referred to as the “Further Investigator”).

The Parties to the Agreement agreed they will mutually utilize each other's research infrastructure necessary for the implementation of the project.

Responsibility for project investigation on the Taiwan side shall be borne and general coordination and work management conducted by Dr. Tsung-Chih Yu, the Principal Investigator of the project on the Taiwan Participant's beneficiary side (hereinafter referred to as the “Principal Investigator “). The Principal Investigator shall be directly reported to by Prof. Yang-Cheng Lin the investigators on the Further Taiwan Project Participant sides (hereinafter referred to as the “Further Investigator”).

The Principal Investigators on each side shall provide such coordination to ensure each task will be conducted in compliance with the approved application.

The Principal Investigators shall be responsible for compiling reports and drawing on funds. Their tasks will also include overseeing each stage and its outputs and compliance with terms and conditions set forth herein.

III.

**Financial Matters**

The Parties to the Agreement agreed on Collaboration funding as follows: The project investigation grant shall be provided to the Czech entity by the provider of the grant in the Czech Republic; the provider for the Taiwan Participan entities shall be the State of Taiwan.

IV.

**Division of Activities within Collaboration**

Within the Collaboration framework the Parties to the Agreement undertake to conduct the following activities, as declared in “Common Proposal” of the project:

|  |  |  |  |
| --- | --- | --- | --- |
| Task no | Task Name | Description | Organisation |
| *1* | *Discover* | *Identify Facilitators, Barriers and Requirements* | *NCKU/*  *CTU/TUL* |
| *2* | *Define* | *Map Digital Biomakers for Rehabilitation Analysis* | *NCKU/*  *CTU/TUL* |
| *3* | *Develop* | *Product design (Wearable Device & Gamification Platform)*  *Development and Technology Exploration* | *NCKU/*  *CTU/TUL* |
| *4* | *Deliver* | *Prototyping and Testing* | *NCKU/*  *CTU/TUL* |
| *5* | *System Planning and Wearable Device Technology Integration* | *sEMG Measurement Technology* | *NCKU/*  *CTU/TUL* |
| *6* | *Game Design* | *Czech Scene/Taiwan Scene* | *NCKU* |
| *7* | *Gamification*  *and*  *Localization (Czech)* | *Design of games that will serve as motivation for rehabilitation exercise. Design will consider cultural background and technology acceptance. Comparative analysis of Taiwanese and Czech design will be performed jointly by Taiwan and Czech partners.* | *CTU/TUL* |
| *8* | *Gamification*  *and*  *Localization (Taiwan)* | *Design of games that will serve as motivation for rehabilitation exercise. Design will consider cultural background and technology acceptance. Comparative analysis of Taiwanese and Czech design will be performed jointly by Taiwan and Czech partners.* | *NCKU/*  *MIRDC* |
| *9* | *User Interface*  *Design /*  *User Experience*  *Study (Czech)* | *User interface design has to consider user characteristics, technology skills, etc. Similarly to gaming design it will consider cultural background. Joint comparative analysis (TW/CZ) will be performed.* | *CTU/*  *TUL/*  *Embitron* |
| *10* | *User Interface*  *Design /*  *User Experience*  *Study (Taiwan)* | *User interface design has to consider user characteristics, technology skills, etc. Similarly to gaming design it will consider cultural background. Joint comparative analysis (TW/CZ) will be performed.* | *NCKU/*  *MIRDC* |
| *11* | *Software /*  *Hardware Integration (Czech)* | *User interface design has to consider user characteristics, technology skills, etc. Similarly to gaming design it will consider cultural background. Joint comparative analysis (TW/CZ) will be performed.* | *CTU/*  *TUL/*  *Embitron* |
| *12* | *Software /*  *Hardware Integration (Taiwan)* | *User interface design has to consider user characteristics, technology skills, etc. Similarly to gaming design it will consider cultural background. Joint comparative analysis (TW/CZ) will be performed.* | *NCKU/*  *MIRDC* |
| *13* | *Validation Testing* | *User interface design has to consider user characteristics, technology skills, etc. Similarly to gaming design it will consider cultural background. Joint comparative analysis (TW/CZ) will be performed.* | *NCKU/*  *CTU/TUL* |
| *14* | *Gait Analysis and Database Construction* | *Databases for acquired data will be designed by university partners and implemented by the industrial partner. It will serve as a source of data for AI algorithms - training of machine learning models.* | *NCKU/*  *CTU/TUL/MIRDC/Embitron* |
| *15* | *Al Model Building (Data Training, Testing, Validation)* | *All partners will participate in the design and implementation of machine learning algorithms for developing models of the rehabilitation process.* | *NCKU/*  *CTU/TUL/ MIRDC/*  *Embitron* |
| *16* | *IHPSS Go Alive* | *System go Alive* | *NCKU/*  *CTU/TUL/ MIRDC/*  *Embitron* |

V.

**Rights to Tangible Assets**

If assets have been created or acquired by joint action of the Parties to the Agreement, such assets shall be in their divided joint ownership according to the extent to which they participated in the creation of such assets; in doubtful cases their interests are equal. The Parties to the Agreement have an obligation to handle jointly owned assets with due diligence, in particular securing them against damage, loss or theft, while also utilising them primarily for activities related to the Collaboration.

VI.

**Intellectual Property Rights**

1. The Parties to the Agreement undertake to keep confidential any facts relating to intellectual property regardless of the form and manner of their disclosure or reception until the time such facts are made public. This obligation does not apply to entities which are entitled to have access to such information under legal regulations. The Parties to the Agreement shall also transfer the confidentiality obligation to their personnel. For the purposes of this Agreement, personnel of a Party to the Agreement shall mean employees of a Party to the Agreement or other persons conducting work for such a Party on the basis of any documentable legal relationship to fulfil obligations under this Agreement of Collaboration. Furthermore, the Parties to the Agreement undertake not to use the intellectual property in contrast with its purpose or the purpose of the mutual collaboration set forth in this Agreement of Collaboration, for the benefit of any third party otherwise than under this Agreement or for their own benefit not related to the subject of the Collaboration if not otherwise agreed.

Intellectual property rights mean in particular:

* Authorship rights, rights in connection with authorship rights, the rights of the author and maker of databases and knowhow.
* Industrial property rights, the protection of creative work results (inventions and utility models), works of industrial design (industrial designs), trademark rights (trademarks) and the layouts of semiconductor products (semiconductor topographies).

The Parties to the Agreement enter into the Collaboration with the following experience:

**Czech Participant “EMBITRON”**:

EMBITRON has many years of experience in managing teams and projects, in recent years especially projects in the field of medical devices. Embitron has high-quality hardware and software equipment for research and development of biomedical applications.

In more than twenty years since the establishment, EMBITRON Ltd. has become one of the major suppliers of unique devices for the treatment of the musculoskeletal system, blood circulation disorders, stagnant metabolism, and trophic changes in limbs, thereby contributing to significant improvement of the life quality for patients suffering from large varieties of diseases.

Alongside with the production of its own in-house developed physiotherapeutic devices EMBITRON produces also other equipment under the OEM/OBL contracts, namely the full line of the laparoscopy equipment (produced in collaboration with Contact Co. LLC, Ukraine) and the full line of medical displays (produced in collaboration with Goomedi Laboratories Ltd., Taiwan). As of June 2016, EMBITRON Ltd. has become a part of the CertiCon Group.

**Taiwan Participant “Metal Industries Research & Development Centre”**

MIRDC has equipment and know-how at the top level and also has at its disposal very good hardware and software equipment and software tools. Standard computer networks with servers and PCs are available.

**Taiwan Participant “National Cheng Kung University”**

NCKU has equipment and know-how at the top level and also has at its disposal very good hardware and software equipment and software tools. Standard university computer networks with servers and PCs are available.

Taiwan Patent file no. 110120832 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (8.6.2021)

Australia Patent file no. 2021203775 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (8.6.2021)

Japan Patent file no. 2021-095855 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (8.6.2021)

New Zealand Patent file no. 776830 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (8.6.2021)

US Patent file no. 17/334841 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (31.5.2021)

Taiwan Patent file no. 110303295 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (23.6.2021)

US Patent file no. 29/796236 WEARABLE INTERFACE FOR INTELLIGENT HEALTH PROMOTION SERVICE SYSTEM (23.6.2021)

**Further Czech Participant “Technical University of Liberec”**:

Czech patent no. 307852 Rehabilitation ergometer and its control (15.5.2019)

The TUL team has many years of experience in the field of mechatronics with a focus on the design of rehabilitation equipment. It has top-notch laboratory equipment for the design and implementation of the hardware part of the project. TUL has very good hardware and software equipment (e.g. Matlab, Labview, C++) and software tools.

**Further Czech Participant “Czech Technical Univiresity in Prague”.**

CTU has very good hardware and software facilities (e.g. Matlab, Labview, C++) and software tools developed at CTU. In addition, CTU has a computational cluster for intensive batch computing. It also offers acceleration on graphics cards.

The project leader from the CTU team is an expert in the field of cognitive sciences who is involved in the design of biomedical signal processing and artificial intelligence methods. Recently, she has been focusing on the aging population and solutions for diagnosis and therapy of selected diseases of this population group.

CTU will provide access to signal processing algorithms and AI methods.

The Intellectual Property owned by each Participant shall hereinafter be referred to as the Participant's **"Background Intellectual Property".**

1. The Parties to the Agreement agreed that rights to each Participant's Background Intellectual Property, as well as rights to intellectual property arising from the Collaboration under this Agreement (hereinafter referred to as the "New Intellectual Property”) shall be owned by the Party which created it using its own personnel and through its own material and financial investments without any contribution from the other party (hereinafter referred to as the "Owner"). Financial support is regarded as an own financial investment.
2. If any New Intellectual Property is created jointly by more Parties to the Agreement (hereinafter referred to as the **"New Joint Intellectual Property"**), such Intellectual Property shall be jointly owned by more Parties to the Agreement (hereinafter referred to as the **“Joint Owners”**). The proportion of interests shall be determined by a written agreement; if doubts arise or no agreement is in existence, the interests are equal.
3. The Parties to the Agreement are obliged to protect the New Intellectual Property, as well as the New Joint Intellectual Property in a manner most suitable for each kind of Intellectual Property. The Owner or Joint Owners bear the cost associated with running appropriate proceedings in order to achieve the most suitable kind of protection.
4. In keeping with the Provider’s interests the Parties to the Agreement shall execute, immediately following the execution of this Agreement of Collaboration, licensing agreements for the New Intellectual Property and the New Joint Intellectual Property. The Parties to the Agreement expressly agree that the New Intellectual Property or the New Joint Intellectual Property under protection may be used by another Party to the Agreement for research and educational purposes free of charge in a manner not infringing its protection.
5. The profit arising from the New Intellectual Property during the term of the project may be included by the Provider as support provided.
6. If a Party to the Agreement transfers rights to the New Intellectual Property or Joint Property to a third party, this Party to the Agreement has an obligation to utilize measures or contracts to make sure the obligations arising from this Agreement are assigned to the new owner of these rights in such a manner so as to provide for the interests of the Provider which arise from this Agreement.

VII.

**Liability and penalties**

1. Each gross breach of any obligations arising from this Agreement shall result in the obligation of the Party to the Agreement in breach of any provisions hereunder to pay to the other Party to the Agreement affected by this breach a contractual penalty in the sum of 100 000 CZK (equivalent to 3 921 EUR) and a possibility for the other Parties to withdraw from this Agreement. This penalty clause does not affect the right to claim damages incurred.
2. If a Party to the Agreement commits a minor breach of its obligations under this Agreement, the Party affected by this breach shall have the right upon written notice to suspend further collaboration and set a deadline for such a breach to be rectified.
3. If the Party in breach fails to rectify the deficiencies found in fulfilling its obligations under this Agreement within the set deadline, the Party affected by this breach has the right to withdraw from this Agreement. A decision to withdraw shall be communicated to the other Party to the Agreement in writing stating the reason thereof.
4. Liability of the Parties to the Agreement for damage caused to third parties shall be governed by general damage liability rules.

VIII.

**Miscellaneous and Final Provisions**

1. This Agreement is concluded for a definite period of time of up to 3 years upon completing the implementation of the project. Upon termination of this Agreement the provisions governing the confidentiality obligation, the protection of intellectual property, the settlement of disputes and the imposing of sanctions shall remain in force.
2. The contracting parties expressly select Czech law as the legal system governing their legal relationship established by the Agreement.
3. The Parties to this Agreement enter into the Agreement in the sense of § 1746 par. 2 of Act No. 89/2012 Coll., the Civil Code, as amended, and declare that all rights and obligations specified under, arising from this Collaboration Agreement and legal relationships not provided for in this Agreement shall be dealt with under the provisions of the Civil Code and the Act no. 130/2002 Coll.
4. The Agreement expresses the free and serious will of the Parties to the Agreement.
5. The Agreement is executed in five identical counterparts, each of which has the validity of the original. Each Party to the Agreement shall receive one counterpart, with the Provider on the Czech and Taiwan side receiving one counterpart each.
6. The rights and obligations inherent in the Agreement shall pass to any legal successors to the contracting parties. No rights and obligations inherent herein may be assigned unless a written consent of the other contracting party has been obtained.
7. This Agreement may be modified and amended only by numbered amendments in writing approved by both parties.
8. If doubts arise, any documents addressed to another participant shall be deemed to have been delivered by the 10th working day after they were demonstrably sent via a postal services provider.
9. The Agreement becomes effective and comes into force upon signing by the authorized representatives of the Parties to the Agreement.
10. All disputes among the Parties to the Agreement arising from this Agreement shall be settled amicably. Unless an amicable solution can be found within a reasonable period of time, either of the contracting parties shall have the right to forward the dispute for resolution to the locally competent court. In line with Article 89(a) Act 99/1963 Coll., Civil Code of Procedure, as amended, the general court of the Further Czech Participant shall be deemed the locally competent court.

IX.

**Signing the Agreement of Collaboration**

The Parties to the Agreement declare they have read the Agreement of Future Collaboration thoroughly and sign it in witness thereof.

In  Plzeň on 27.1.2022

On behalf of the Czech Participant

Ing. Karel Kraus, MBA - Managing Director

In Kaohsiung City on 27.1.2022

On behalf of the Taiwan Participant

Dr. Tsung-Chih Yu

In Tainan City on 27.1.2022

On behalf of the Taiwan Participant

Prof. Yang-Cheng Lin

In Liberec on 27.1.2022

On behalf of the Further Czech Participant

doc. RNDr. Miroslav Brzezina, CSc. - Rector

In Praha on 27.1.2022

On behalf of the Further Czech Participant

Mgr. Ondřej Velek, Ph.D. – managing director