

S1/23-545-01

COOPERATION AGREEMENT

DEVELOPMENT OF AUTONOMOUS DRIVING SMART AIR CLEANER AND
SAFETY CONTROL SERVICES PLATFORM FOR IMPROVING INDOOR AIR
QUALITY(IAQ) IN INDUSTRIAL AND PUBLIC SITES

KOREA-CZECH BILATERAL CO-FUNDING R&D PROJECT

Czech project ID: TM04000003

Korean project ID: P194000004

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Project Participants

Czech Republic	Korea
<p>1a) Principal Applicant / Lead Organization</p> <p><i>Name of institution/enterprise:</i> GABEN, spol. s r.o. <i>Address:</i> Hájkova 558/1; 702 00 Ostrava, Czech Rep. <i>Phone:</i> +420 596 117 402 <i>Fax:</i> <i>Website:</i> http://www.gaben.cz</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Position:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>	<p>1b) Principal Applicant / Lead Organization</p> <p><i>Name of institution/enterprise:</i> Shinsung ENG Co., Ltd. <i>Address:</i> 8, Daewangpangyo-ro, 395beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13543, Korea <i>Phone:</i> +82-31-788-9202 <i>Fax:</i> +82-31-788-9440 <i>Website:</i> www.shinsung.co.kr</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Position:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>
<p>2a) Participating Organization</p> <p><i>Name of institution/enterprise:</i> VSB – Technical University of Ostrava <i>Address:</i> 17. listopadu 2172/15; 708 00 Ostrava – Poruba; Czech Rep. <i>Phone:</i> +420 597 321 111 <i>Fax:</i> +420 596 918 507 <i>Website:</i> https://www.vsb.cz/cs/</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>System:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>	<p>2b) Participating Organization</p> <p><i>Name of institution/enterprise:</i> Advanced Institute of Convergence Technology <i>Address:</i> 145 Gwanggyo-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16229, Republic of Korea <i>Phone:</i> +82-31-888-9114 <i>Fax:</i> +82-31-888-9009 <i>Website:</i> aict.snu.ac.kr</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Center:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>
<p>3a) Participating Organization</p> <p><i>Name of institution/enterprise:</i> Czech Technical University in Prague <i>Address:</i> Jugoslávských partyzánů 1580/3 160 00 Praha 6; Czech Rep. <i>Phone:</i> +420 224 351 111 <i>Fax:</i> <i>Website:</i> https://www.cvut.cz/en</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>System:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>	<p>3b) Participating Organization</p> <p><i>Name of institution/enterprise:</i> Sungkyunkwan University <i>Address:</i> 2066 Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do (16419), Republic of Korea <i>Phone:</i> +82-31-290-5114 <i>Fax:</i> +82-31-290-7610 <i>Website:</i> www.skku.edu</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Engine:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>

4a) Participating Organization

Name of institution/enterprise: ENVltech Bohemia s.r.o.

Address: Ovocná 1021/34; Praha 6; 16100

Phone:

Fax:

Website: <https://www.envitech-bohemia.cz/en>

Contact Person

Name: [REDACTED]

Division: [REDACTED]

Phone: [REDACTED]

Email: [REDACTED]

I. Definitions

This Agreement is made and entered into among the aforementioned Project participants from Czech Republic and Korea on the date of its signature by all Parties.

This section of Agreement defines some basic terms.

1. **“Parties”** mean the Parties signing this Cooperation Agreement.
2. **“Project”** means all the Projects as described in the work-plan referred to in Common Proposal for Korea-Czech Bilateral Co-funding R&D Project (“Common Proposal”), which is attached hereto in Annex 1.
3. **“Cooperation Agreement”** or **“Agreement”** means this Cooperation Agreement including its annexes, if exist.
4. **“Results”** means the results, including information, products, arising from this Project, as well as copyright or rights attaching to the results following applications for, or the issue or registration of, patents, designs and models, plant varieties, additional certificates or other similar forms of protection.
5. **“Pre-existing Knowledge”** means information, other than Results, held by the Parties prior to the conclusion of the Agreement or acquired in parallel with it and necessary for carrying out the Project, as well as copyright or rights attaching to such information following applications for, or the issue or registration of, patents, designs and models, plant varieties, additional certificates or other similar forms of protection.
6. **“Access Rights”** means licenses and rights of use in respect of Results or Pre-existing Knowledge.
7. **“Use”** means the direct or indirect use of the Results in research activities during this Project or for exploitation purposes after the end of this Project.
8. **“Exploitation”** means the direct or indirect use of the Results for creating and marketing a product or process or for creating and providing a service after the end of this Project

II. Definition of the Partnership

a. Scope

This Agreement governs the rights and obligations of the Parties with respect with the partnership to be carried out for the Project. This partnership concerns technical and commercial exploitation of the Project.

Provisions may be added to this Agreement to expand or clarify other aspects, provided that none of them contradicts any of the provisions of this Agreement.

This project aims to develop 1)



The Parties shall carry out the work in accordance with the conditions set out in this Agreement. Subject to cases of force majeure, the Parties shall use reasonable endeavors to achieve the Results aimed at by the Project and shall carry it out jointly and severally.

b. Duration

The duration of the Project is 36 months (January 1, 2023 – December 31, 2025).

III. Project Management

The highest consultative body of the Project Management is the **Steering Committee**. The Steering Committee, presided by the Project Director who will be appointed by the Steering Committee, is made up of the representatives of each Party.

Steering Committee is responsible for:

- Overall strategy
- Control of overall budget
- Control of overall timing
- Quality Control
- Possible sanctions
- Resolution of any other issues in performing this Project

The Steering Committee will meet once per year over the duration of the Project. The Project Director can summon an extraordinary Steering Committee for specific purposes at any time, in which case he should specify the topics proposed solutions for decisions.

The meeting of Steering Committee may take place either offline on site or online by way of teleconference or video conference so that all of the Parties can participate in such meeting. Each Party shall appoint its representative who may be delegated by a proxy with prior notice to the other Parties. For avoidance of any doubt, any meeting without all representatives (or proxies) of the Parties shall not take place for valid resolutions of the Steering Committee.

Each Party shall have one vote at the meeting and resolution of the Steering Committee shall be validly taken by a majority of votes of the Parties. If the Project Director or other external experts are not representatives or proxies of the Parties, they shall not have any right to vote.

Any other decision-making process, as well as particular membership of the Committee and delegation of rights and duties regarding executive management from Steering Committee to Project Director will be determined at the first meeting of the Steering Committee.

Project Manager for each Party will be appointed by each Party. Project Manager is responsible for managing and supervising the work which needs to be performed by the Party under this Project,

including the quality and the timing of performance as agreed in this Agreement or by the Steering Committee.

a. Financial conditions

Each Party shall bear its own costs in connection with the carrying out of the Project and will be solely responsible for its applications to obtain subsidies or funds for this Project therefore. The costs endured by each Party in connection with the Project are listed in Common Proposal.

The Parties hereby acknowledge and understand that funds for this Project will be provided by funding authorities (e.g., Technology Agency of Czech Republic, TACR; and Korean Institute for Advancement of Technologies, KIAT) and the recipients shall be subject to certain funding approval conditions, funding agreement, rules or regulations of such funding authorities. The Parties further acknowledge and understand that funds may be reduced, suspended or dropped depending on the results of annual evaluation by such funding authorities, which shall not be deemed to be a breach of this Agreement.

Each Party hereto shall arrange for the financing of the research work assigned to it in accordance with the program, including any costs resulting from the commissioning of its subcontractors, the prototypes and/or specimens to be provided.

Each of the Parties shall bear its own expenses incurred in relation to the meetings for the Steering Committee and working group, provided that any common costs for such meetings may be evenly shared by each of the Parties.

b. Project phases and Development of goals of this Project

Project phases and Development of goals of this Project are mentioned in Common Proposal in Annex 1 as well as the role and responsibilities. Each Party shall know its tasks and will do all necessary steps for achieving the goals mentioned in Common Proposal and/or agreed upon by the Steering Committee. These steps will lead to achieving the final solution of the Project.

IV. Joining of Additional Parties

The Parties can suggest to the Steering Committee the joining of additional Parties to this Agreement. Notwithstanding Section III, the decision on such entry shall be taken unanimously by all Parties, and such new member shall have to agree upon and comply with all of the terms and conditions of this Agreement, and additional conditions, if any, to be agreed upon by the Parties on a case-by-case basis.

V. Confidentiality

1. None of the Parties shall disclose or leak to any third Party other than any person of the Parties who needs to know information in order to conduct and manage this Project under this Agreement, any information provided or disclosed by other Parties during the term of this Agreement which is marked as confidential at the time of the submission or disclosure from other Parties, or which is disclosed orally with a statement upon such disclosure that it is confidential and the disclosing Party notifies other Parties in writing within thirty (30) days after the disclosure that such information is confidential (collectively the "Confidential Information"). Further, the Parties hereto shall cause the recipient of Confidential Information to hold such Confidential Information in confidence even after he or she changes its work position or leaves the Party; provided, however, that the above provisions shall not apply to any information which, it shall be demonstrated by the recipient:
 - i. was already possessed by the recipient at the time of the provision or disclosure;
 - ii. was already part of the public domain at the time of the provision or disclosure;
 - iii. became a part of the public domain after the provision or disclosure without fault of the recipient;
 - iv. was lawfully acquired from a third Party who has the legitimate right to that information;
 - v. was independently developed and/or acquired by the recipient without reference to the Confidential Information disclosed by other Parties; or
 - vi. was covered by a prior written consent by other Parties for the disclosure.

2. If one of the Parties is required by a competent court or administrative institution to disclose any Confidential Information (other than those specified in the proviso of Section 1 above) under any law or regulation, it may disclose such information to such court or administrative institution; provided, however, that:
 - i. it shall advise other Parties of the content prior to the disclosure;
 - ii. it shall make the disclosure only to the extent of such portion which is the subject of a lawful order to disclose;
 - iii. it shall expressly state in writing, upon disclosure, that such information is confidential; and,
 - iv. it shall, in accordance with laws and regulations, take necessary steps to protect such information through the discussion with other Parties, if possible.

3. None of the Parties shall, without the prior written consent of other Parties, use the Confidential Information (other than those specified in the proviso of Section 1 above) for any purpose other than for the Project and this Agreement.
4. Articles 5.1 through 5.3 shall survive the expiration of the term of this Agreement or termination of this Agreement in full force and effect for a period of five (5) years from the date of disclosure of such Confidential Information. Provided, however, that such period may be extended or shortened upon discussion between the Parties.
5. The Parties shall cause their employees, subcontractors, and any other third Parties to whom they disclose Confidential Information, to comply with this duty of confidentiality and sign a non-disclosure agreement duly prepared by the disclosing Party in conformity with this duty of confidentiality hereunder.

VI. Proprietary Rights

1. In the performance of the Project and by applying the usual care in the field, the Parties shall try to attain results which do not infringe proprietary rights owned by third Parties. If a Party knows or becomes aware of proprietary rights owned by third Parties opposed to the intended Results, it shall immediately inform the other Party. Such information shall include a recommendation how to proceed with the development work observing the third Party's proprietary right. If necessary, the Parties decide in mutual agreement whether to apply for a license with such third Party.
2. Each Party remains the owner of their proprietary rights owned by them at the time this Agreement becomes effective or which is developed aside from the development work under this Agreement.
3. Proprietary Rights achieved during the Project under this Agreement shall belong to the Party whose employee(s) made the invention or otherwise attained the proprietary right. The Party attaining such proprietary rights shall grant to the other Party, if requested, a royalty bearing, non-exclusive, non-transferable, non-sublicensable, world-wide, irrevocable and perpetual Access Rights to Use such proprietary right for the business of such Party.
4. Proprietary rights achieved during the Project under this Agreement in which employees of both Parties are involved shall be discussed afterwards.
5. If Parties don't find the consensus about the jointly achieved proprietary rights in Article 6.4 within thirty (30) days from the start of such discussion:
 - i. Proprietary rights achieved during the Project under this Agreement in which employees of both Parties are involved will be filed as joint application(s) (Joint Proprietary Rights).
 - ii. The ownership of such Joint Proprietary Rights will belong to both Parties involved with equal shares if not otherwise agreed to by the Parties involved with such Joint Proprietary Rights at the time of application. All costs for obtaining and maintaining the Joint Proprietary Rights will be borne by the Parties involved at equal shares. The subsequent applications in foreign countries will be decided on a case by case basis by the Parties involved. If a Party is not interested in applying for such a Joint Proprietary Right or only in particular countries or does not want to pursue an application or to

maintain such Joint Proprietary Rights this Party shall immediately inform the other Party and offer on a free of charge basis the said Joint Proprietary Right to the other Party. Such an offer shall be made in due course enabling the other Party to undertake all measures necessary to safeguard the right, especially to claim priorities relating to the main application in case of applications to be submitted in foreign countries. The offering Party shall, however, have a royalty free, non-exclusive, non-transferable, non-sublicensable, world-wide, irrevocable and perpetual Access Rights to Use such proprietary right for the business of such Party or such Party's Related Companies.

- iii. Licensing of Joint Proprietary Rights to third Parties will be decided by the Parties involved with them with mutual agreement on a case by case basis.

VII. Exploitation and Dissemination of Results

After the completion of the Project, the owner of any intellectual property rights in the Results under this Project shall grant to the other Parties such Access Rights as may be requested for the Use of the Results for any purpose subject to such compensation which shall be fair and reasonable having regard to all the circumstances, including the relative financial, technical and commercial contributions made by the other Parties. Licenses relating to Pre-existing Know-how or background intellectual property rights which have been already owned by the Parties prior to this Project shall be discussed when a technology transfer agreement is to be entered into afterwards.

All Parties agree to work together on an implementation plan for results and submission of implementation reports.

If the Parties fail to commercially Exploit the Results within five (5) years from the completion of the Project, the owners of any intellectual property rights in the Results shall make such technology available for licensing to third Parties, without any prior consent of or compensation for the other Parties hereto provided that such licenses shall not be granted to the current or potential competitors of any other Parties.

A joint owner of Joint Proprietary Rights under this Project shall be entitled to Use them for commercialization without any prior consent of or compensation for the other joint owners thereof.

Parties shall be entitled to use their Results for further research for free. Where this involves the use of information supplied or generated by other Parties, prior consent of the other Parties is required provided that such consent should not be unreasonably withheld.

VIII. Termination

1. No Party shall be entitled to withdraw from this Cooperation Agreement and/or participation in the Project unless:
 - a. That Party has obtained the prior written consent of the other Parties such consent not to be unreasonably withheld, to the withdrawal from, or termination of, the Agreement;
 - or**
 - b. The Party does not get enough funding for its participation in the Project

2. A Party shall not by withdrawal or termination be relieved from:
 - a. its responsibilities under this Cooperation Agreement in respect of that part of that Party's work on the Project which has been carried out (or which should have been carried out) up to the date of withdrawal or termination;
 - or**
 - b. any of its obligations or liabilities arising out of such withdrawal or termination.

3. Upon withdrawal from this Project or termination of participation therein, the leaving Party shall immediately return all of Confidential Information and other information or materials, including its original, copies, modifications, revisions or derivatives, to the disclosing Party who provided or disclosed them for this Project under this Agreement. Further upon such withdrawal or termination, the leaving Party shall not be entitled to use any Pre-existing Know-how or background intellectual property rights provided by the other Parties for this Project and the Results generated by them under this Agreement.

4. In the following cases of defaults, either Party may terminate this Agreement if defaults are not remedied within thirty (30) days from a written notice to the other defaulting Party (hereinafter referred to as "Defaulting Party") to remedy the defaults:
 - a. The Defaulting Party delays its obligations pursuant to this Agreement without a prior written consent of the other Party; or
 - b. The Defaulting Party commits other breach of this Agreement.

5. In the following cases, either Party may immediately terminate this Agreement:
 - a. The other Party becomes insolvent or bankrupt;

- b. Petition is filed by or against the other Party under bankruptcy law, corporate reorganization law, debtor rehabilitation law or any other law for relief of debtors and for similar purposes;
- c. The other Party assigns all or a substantial part of its business or assets for the benefit of creditors; or
- d. The other Party is considered objectively unable to remedy defaults or continue to perform the Research under this Agreement for any other reasons.

IX. Liability

1. One Party shall not be liable for the acts or omissions of another Party, purely on account of the fact that both Parties are cosignatories to this Agreement, and the second Party shall keep and save harmless the first Party from any and all claims, demands or actions that may arise out of, or by reason of, such act or omission.
2. Neither Party warrants correctness, completeness, non-infringement against third Parties' intellectual property rights, fitness for particular purpose or success of commercialization of any information, Pre-existing Knowledge, background intellectual property rights that the Party provided for the other Parties for this Project or the Results generated by him under this Project, provided that the foregoing provision shall not apply in case of intent or gross negligence.

X. Force Majeure

1. In case of frustration of this Agreement or if the fulfilment of substantial provisions of this Agreement is affected by Force Majeure, the PARTIES shall endeavor to adapt the Agreement to the new situation. In the event that the PARTIES do not agree upon such an adaptation within a period of three months, the Agreement shall, as far as such PARTY is concerned, be terminated without notice by the PARTY that cannot reasonably be expected to fulfil the Agreement.
2. No PARTY shall be liable for any failure to perform or any delay in performing any of its obligations under this Agreement if such failure or delay arises out of Force Majeure. The PARTY facing an event of Force Majeure shall promptly notify the other PARTIES and shall use its reasonable endeavors to remedy any default or delay occasioned thereby forthwith upon such event ceasing to apply.
3. Force Majeure shall mean any act, event or condition beyond the reasonable but not limited to acts of God, war, riots, acts of Government or any control of a PARTY that was not reasonably foreseeable at the time of execution state or political subdivision thereof, fires, floods, explosions of other catastrophes, of this Agreement and is not avoidable under normal circumstances, including labor disturbances, freight embargoes or material shortages.

XI. Settlement of Disputes

In case of dispute or difference between the Parties arising out of or in connection with this Cooperation Agreement, the Parties shall first endeavor to settle it amicably.

All disputes or differences arising in connection with this Cooperation Agreement which cannot be settled as provided for in the preceding Article shall be finally settled by arbitration in Czech or such other place as the Parties may agree, under the rules of Arbitration of the International Chamber of Commerce by one or more arbitrators to be appointed under the terms of those Rules. In any arbitration in which there are three arbitrators, the Chairman shall be of juridical education.

If the Arbitrators are not appointed within thirty (30) days from the request for arbitration by a disputing Party either disputing Party may ask the International Chamber of Commerce for the appointment of the Arbitrators.

The language of arbitration proceedings shall be English.

The award of Arbitrators will be final and binding upon the Parties concerned. The Parties shall be entitled to enforce the award of arbitration or apply for preliminary injunction, if required, at the court of competent jurisdiction.

All aspects of the arbitration will be confidential. Neither Party may disclose the existence, content or results of the arbitration, except as necessary to comply with legal or regulatory requirements.

XII. Language

This Agreement is drawn up in English which language shall govern all documents, notices and meetings for its application and/or extension or in any other way relative thereto together with all reports, communications, correspondence and technical work between the Parties shall be in English.

XIII. Applicable Law

This Agreement shall be constructed according to and governed by laws of each country (Czech and Korea).

XIV. Other Provisions

1. Modifications and supplements to this Agreement shall be marked as such and shall be made in writing and signed by a duly authorized representative of each Party to become legally effective. The same shall apply to the waiver of this requirement.
2. None of the Parties shall be entitled to accept obligations with effect to the other Parties without the latter's express prior written consent.
3. Should any provision of this Agreement be held to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions of this Agreement shall in no way be affected or impaired thereby.
4. The Parties further agree to bind their officers, Researchers, employees, agents, subcontractors and other personnel related to this Project to the terms and conditions of this Agreement.
5. During the term of this Agreement, no Party shall, on its own or in conjunction with any third Party, directly or indirectly, enter into any agreement or arrangement having identical or similar goals to the Project.
6. This Agreement constitutes an entire agreement and understanding by and between the Parties with respect to the subject matter hereof and supersedes and cancels any prior representations, negotiations, commitments, undertakings, communications, understandings and agreements, whether written or oral, by and between the Parties in relation thereto. In the event that a translation of this Agreement is prepared and signed by the Parties, this English language version shall be the official version and shall govern if there is a conflict between this English language version and the translation.
7. The Parties hereby acknowledge and understand that the approval conditions, funding agreement, rules or regulations thereof shall apply additionally and that in the event of contradictions such approval conditions, funding agreement, rules or regulations of funding authorities shall prevail over the provisions of this Agreement.

XV. Signature list

This Agreement shall enter into force following its signature at the bottom hereof by all the Parties. This Agreement comes into force upon not only signature by the last person and but also approval of funding authorities.

a. GABEN, spol. s r.o.

In:

Date: 25 -01- 2023

Ing. Jakob UNUCKA, MBA
Responsible person for Project solving

 Hájkova 1, 702 00
Gaben spol. s r.o. Ostrava-Přívov
Tel: 596 117 402 - info@gaben.cz
IČ: 19012021, DIČ: CZ19012021
Obchodní rejstřík: C/940 Ostrava

Pavel BENDA
statutory representative

b. VSB – Technical University of Ostrava

In:

Date: 24. 01. 2023



Ing. Pavel Staša, Ph.D.

Responsible person for Project solving



prof. RNDr. Václav Snášel, CSc.

rector



c. Czech Technical University in Prague

In:

PRAGUE

Date:

19 -01- 2023



doc. Ing. Lukáš Vojtěch, Ph.D.

Responsible person for Project solving



doc. RNDr. Vojtěch Petráček, CSc.

rector

ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE
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JUGOSLÁVSKÝCH PARTYZÁNŮ 1580/3
160 00 PRAHA 6 – DEJVICE
(7/2)

d. ENVitech Bohemia s.r.o.

In: Praha

Date: 24.1.2023



ENVitech Bohemia s.r.o.
Ovocná 34, 161 00 Praha 6

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DIČ: CZ47119209
www.envitech.eu



A handwritten signature in blue ink, appearing to be "Z. Novák".

Ing. Zbyněk Novák

Responsible person for Project solving

A handwritten signature in blue ink, appearing to be "V. Adamec".

Ing. Vladimír Adamec

statutory representative

Ing. Zdeněk Grepl

statutory representative

e. Shinsung ENG Co., Ltd.

In:

Date:

Dong Hun Oh

Responsible person for Project solving



Yoon Soo AHN

President,

Shinsung ENG Co., Ltd.



f. Advanced Institute of Convergence Technology

In:

Date:

Yong-Shin Kang, , Ph.D.

Responsible person for Project solving



Jae Young Kim

*President of Advanced Institute of Convergence
Technology*



g. Sungkyunkwan University

In:

Date:

prof. Sang Do Noh

Responsible person for Project solving



Jaeboong Choi

*President of Research & Business Foundation,
Sungkyunkwan University*



T A

C R

DELTA 2 Programme



Common Proposal

For TA CR-KIAT Bilateral Co-funding R&D Project

Please note that the information provided will be taken into account when evaluating the project proposal submitted by partner institution/enterprise to the 4th public call of the DELTA 2 programme of the Technology Agency of the Czech Republic and the Korea Institute for Advancement of Technology.

Principal Applicant / Lead Organization from the both sides shall complete this Common Proposal in collaboration and submit each to the respective agency when submitting the proposal package.

Project Title: Development of autonomous driving smart air cleaner and safety control services platform for improving indoor air quality (IAQ) in industrial and public sites	
Project Duration: <ul style="list-style-type: none">· 36 months (on the Czech side)· 36 months (on the Korean side)	*Total Estimated Project Cost: USD 2 949 977.87
Project number (on the Czech side): TM04000003	*Project number (on Korean side): P194000004

* Total estimated costs including the KIAT and TA CR support and private resources of all participants

** Will be generated by the TA CR information system

*** To be provided by the KIAT, leave blank

1. Affidavit

Organizations listed under Consortium Partners herein below (collectively referred to as the "consortium") hereby declare and confirm as follows:

- The consortium intends to collaborate on the above-mentioned R&D project.
- No organization in the consortium is in liquidation and insolvency or impending bankruptcy, and is not being dealt with in insolvency proceedings.
- No organization in the consortium is in financial difficulty.

T A

C R

DELTA 2 Programme



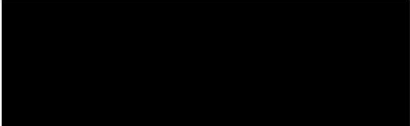

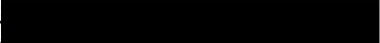
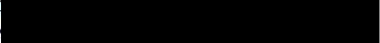

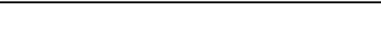
Consortium Partners

Participants from Czech Republic	Participants from Republic of Korea
<p>1a) Principal Applicant / Lead Organization</p> <p><i>Name of institution/enterprise:</i> GABEN, spol. s r.o. <i>Address:</i> Hájkova 558/1; 702 00 Ostrava, Czech Rep. <i>Phone:</i> +420 596 117 402 <i>Fax:</i> <i>Website:</i> http://www.gaben.cz/cz</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Position:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>	<p>1b) Principal Applicant / Lead Organization</p> <p><i>Name of institution/enterprise:</i> Shinsung ENG Co., Ltd. <i>Address:</i> 8, Daewangpangyo-ro, 395beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13543, Korea <i>Phone:</i> +82-31-788-9202 <i>Fax:</i> +82-31-788-9440 <i>Website:</i> www.shinsung.co.kr</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Position:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>
<p>2a) Participating Organization</p> <p><i>Name of institution/enterprise:</i> VSB – Technical University of Ostrava <i>Address:</i> 17. listopadu 2172/15; 708 00 Ostrava – Poruba; Czech Rep. <i>Phone:</i> +420 597 321 111 <i>Fax:</i> +420 596 918 507 <i>Website:</i> https://www.vsb.cz/cs/</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED] <i>Control:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>	<p>2b) Participating Organization</p> <p><i>Name of institution/enterprise:</i> Advanced Institute of Convergence Technology <i>Address:</i> 145 Gwanggyo-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16229, Republic of Korea <i>Phone:</i> +82-31-888-9114 <i>Fax:</i> +82-31-888-9009 <i>Website:</i> aict.snu.ac.kr</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED] Autonomous Driving <i>Center:</i> [REDACTED] <i>Phone:</i> [REDACTED] <i>Email:</i> [REDACTED]</p>
<p>3a) Participating Organization</p> <p><i>Name of institution/enterprise:</i> Czech Technical University in Prague <i>Address:</i> Jugoslávských partyzánů 1580/3 160 00 Praha 6 - Dejvice; Czech Rep. <i>Phone:</i> +420 224 351 111 <i>Fax:</i> <i>Website:</i> https://www.cvut.cz/en</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED]</p>	<p>3b) Participating Organization</p> <p><i>Name of institution/enterprise:</i> Sungkyunkwan University <i>Address:</i> 2066 Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do (16419), Republic of Korea <i>Phone:</i> +82-31-290-5114 <i>Fax:</i> +82-31-290-7610 <i>Website:</i> www.skku.edu</p> <p>Contact Person <i>Name:</i> [REDACTED] <i>Division:</i> [REDACTED]</p>

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<p>4a) Participating Organization</p> <p><i>Name of institution/enterprise:</i> ENVitech Bohemia s.r.o. <i>Address:</i> Ovocná 1021/34; Praha 6; 16100 <i>Phone:</i> <i>Fax:</i> <i>Website:</i> https://www.envitech-bohemia.cz/en</p> <p>Contact Person</p> <p><i>Name:</i>  <i>Division:</i>  <i>Phone:</i>  <i>Email:</i> </p>	

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2. Finance

1a) Total Project Budget of the Principal Applicant (on the Czech side) – USD

Name of institution/enterprise: GABEN, spol. s r.o.

Indicator	2023	2024	2025*	Total
Costs	116 343.6	132 087.35	112 074.1	360 505.05
Support from the TA ČR	75 570	84 535.9	71 727.4	231 833.3
Private sources	40 773.6	47 551.45	40 346.7	128 671.71

* Max. project duration is 36 months.

Exchange rate: 1 USD = 23.422 CZK

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

Own funds inserted into the project represent income from our previous economic activities.

1b) Declaration of the Principal Applicant (on the Korean side) – USD

Name of institution/enterprise: SHINZUNG E&G Co., Ltd.

Indicator	2022	2023	2024	2025*	Total
Costs	30 641.03	362 692.31	307 692.31	282 051.28	983 076.92
Support from the KIAT	19 230.77	224 358.97	153 846.15	141 025.64	538 461.54
Private sources	11 410.26	138 333.33	153 846.15	141 025.64	444 615.38

* Max. project duration is 36 months.

Exchange rate: 1 USD = 1 300 KRW

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

The fiscal year will start Dec-2022 ~ Nov-2023. This is the reason why Korean participants fill their budget in 2022 and 2023.

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2a) Total Project Budget of the Principal Applicant (on the Czech side) – USD

Name of institution/enterprise: VSB – Technical University of Ostrava

Indicator	2023	2024	2025*	Total
Costs	74 716	83 521.9	69 912.9	228 150.8
Support from the TA ČR	64 234.5	73 392.5	60 943.8	198 570.8
Private sources	10 481.5	10 129.4	8 969.1	29 580

* Max. project duration is 36 months.

Exchange rate: 1 USD = 23.422 CZK

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

Own funds inserted into the project represents income from our previous economic activities (contract research, specific research and so on) of the faculty.

2b) Declaration of the Principal Applicant (on the Korean side) – USD

Name of institution/enterprise: Advanced Institute of Convergence Technology (AICT)

Indicator	2022	2023	2024	2025*	Total
Costs	8 379.42	106 963.33	177 476.15	162 686.47	455 505.38
Support from the KIAT	6 410.26	83 333.33	153 846.15	141 025.64	384 615.38
Private sources	1 969.17	23 630	23 630	21 660.83	70 890.00

* Max. project duration is 36 months.

Exchange rate: 1 USD = 1 300 KRW

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

The fiscal year will start Dec-2022 ~ Nov-2023. This is the reason why Korean participants fill their budget in 2022 and 2023.

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3a) Total Project Budget of the Principal Applicant (on the Czech side) – USD

Name of institution/enterprise: Czech Technical University in Prague

Indicator	2023	2024	2025*	Total
Costs	101 400.4	106 737.3	100 066.2	308 203.9
Support from the TA ČR	87 140.3	93 800.7	87 268.4	268 209.4
Private sources	14 260.1	12 936.6	12 797.8	39 994.5

* Max. project duration is 36 months.

Exchange rate: 1 USD = 23.422 CZK

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

Own funds inserted into the project represents income from our previous economic activities (contract research, specific research and so on) of the faculty.

3b) Declaration of the Principal Applicant (on the Korean side) – USD

Name of institution/enterprise: Sungkyunkwan University (SKKU)

Indicator	2022	2023	2024	2025*	Total
Costs	7 056.41	84 676.92	84 676.92	77 620.51	254 030.77
Support from the KIAT	6 410.26	76 923.08	76 923.08	70 512.82	230 769.23
Private sources	646.15	7 753.85	7 753.85	7 107.69	23 261.54

* Max. project duration is 36 months.

Exchange rate: 1 USD = 1 300 KRW

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

The fiscal year will start Dec-2022 ~ Nov-2023. This is the reason why Korean participants fill their budget in 2022 and 2023.

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4a) Total Project Budget of the Principal Applicant (on the Czech side) – USD

Name of institution/enterprise: ENVitech Bohemia s.r.o.

Indicator	2023	2024	2025*	Total
Costs	116 343.6	132 087.35	112 074.1	360 505.05
Support from the TA ČR	75 570	84 535.9	71 727.4	231 833.3
Private sources	40 773.6	47 551.45	40 346.7	128 671.71

* Max. project duration is 36 months.

Exchange rate: 1 USD = 23.422 CZK

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

Own funds inserted into the project represent income from our previous economic activities.

4b) Declaration of the Principal Applicant (on the Korean side) – USD

Name of institution/enterprise:

Indicator	2023	2024	2025*	Total
Costs				
Support from the KIAT				
Private sources				

* Max. project duration is 36 months.

Exchange rate: 1 USD = xxx KRW

If the government contribution does not cover all project costs, how will you finance the rest of the project costs (own company profit, bank loan, ...)?

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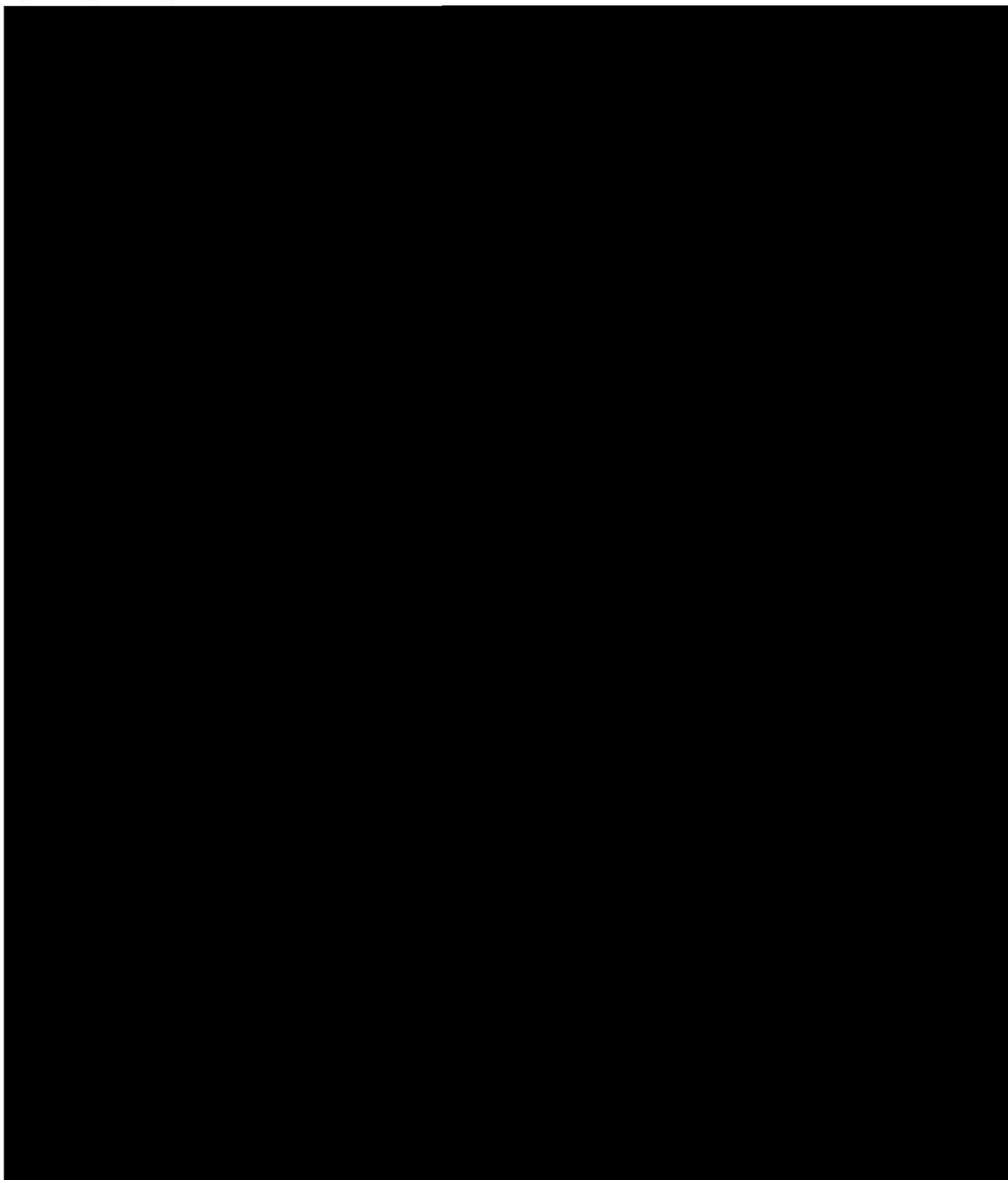
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3. Resumé of the project

1. Project Description

[Background]

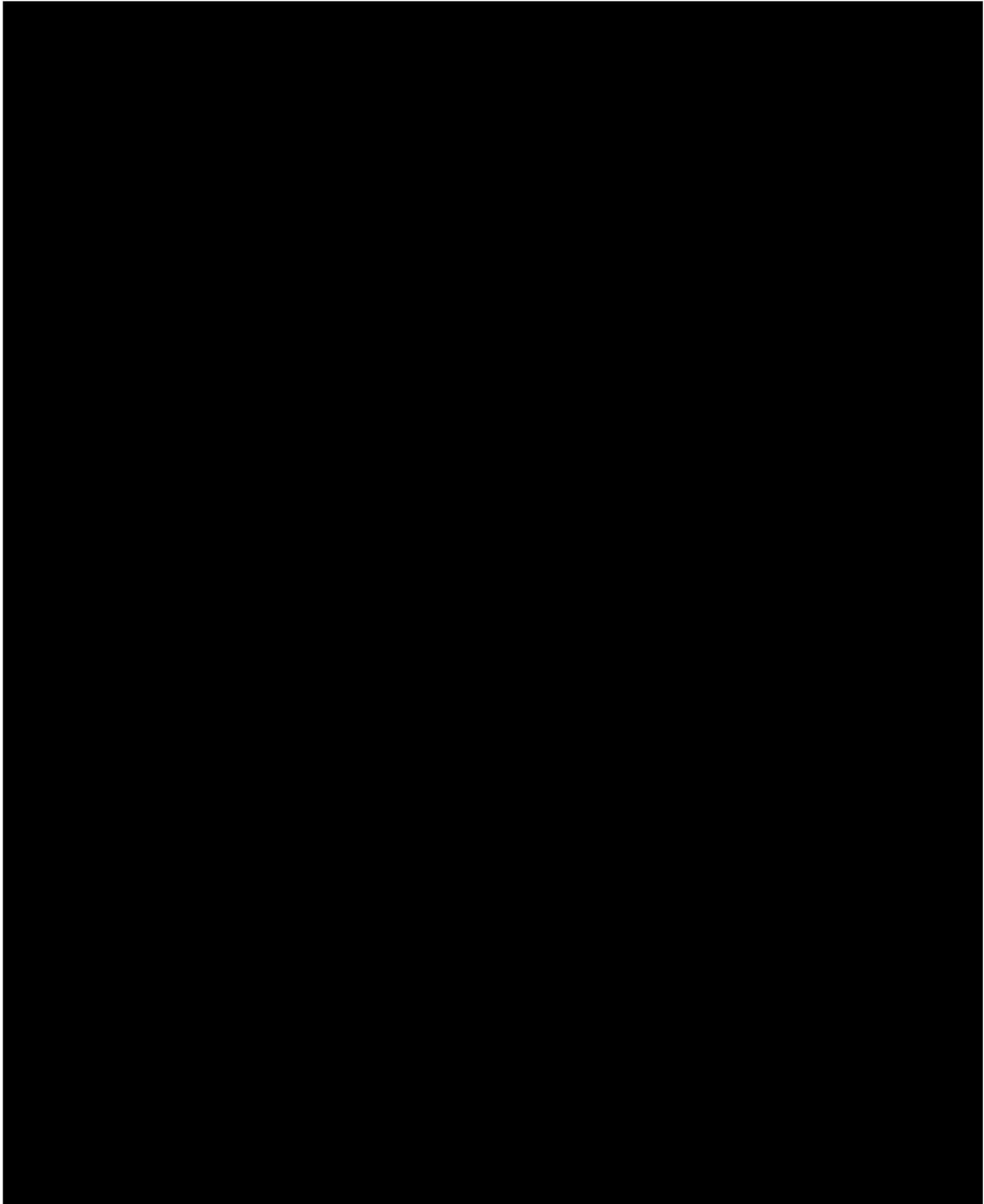


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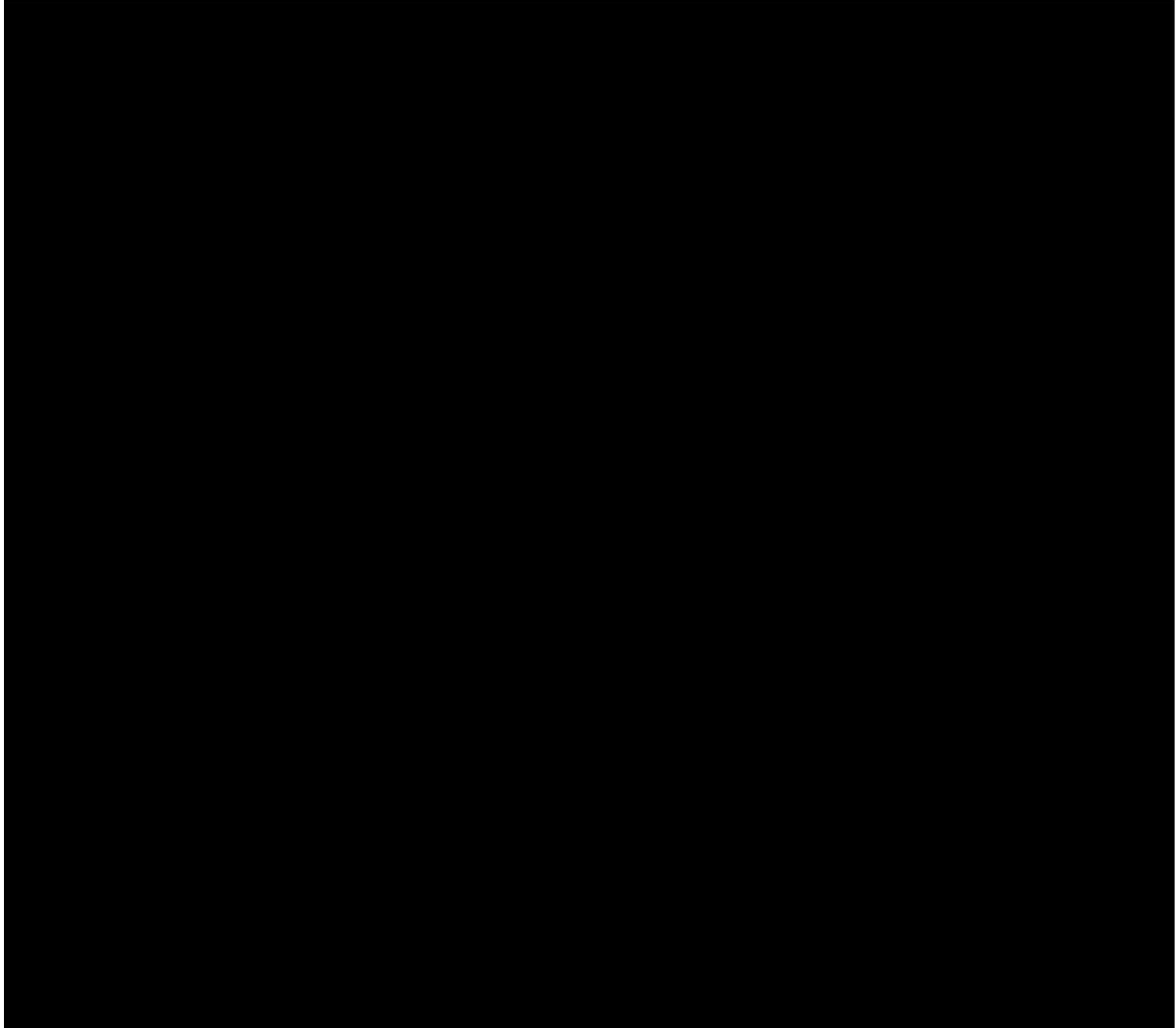
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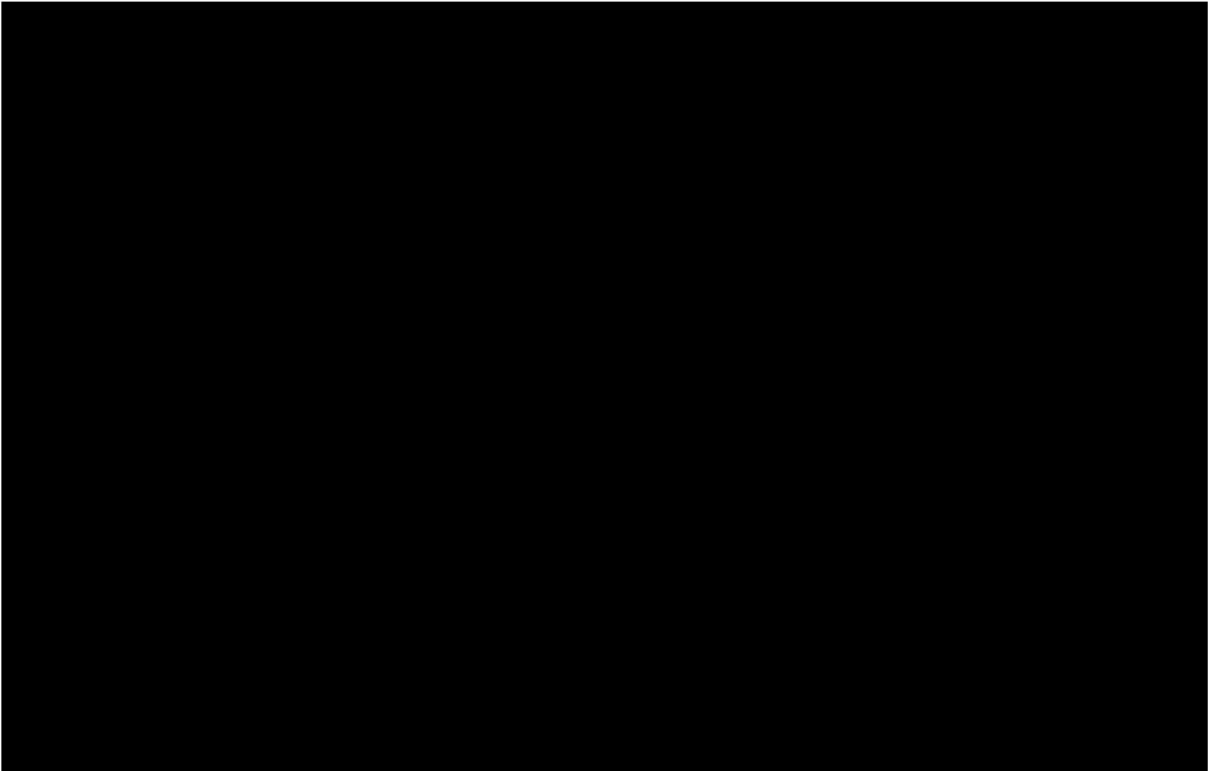
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Figure 1. Concept map for the technology development



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Figure 2. Objective tree for the function design

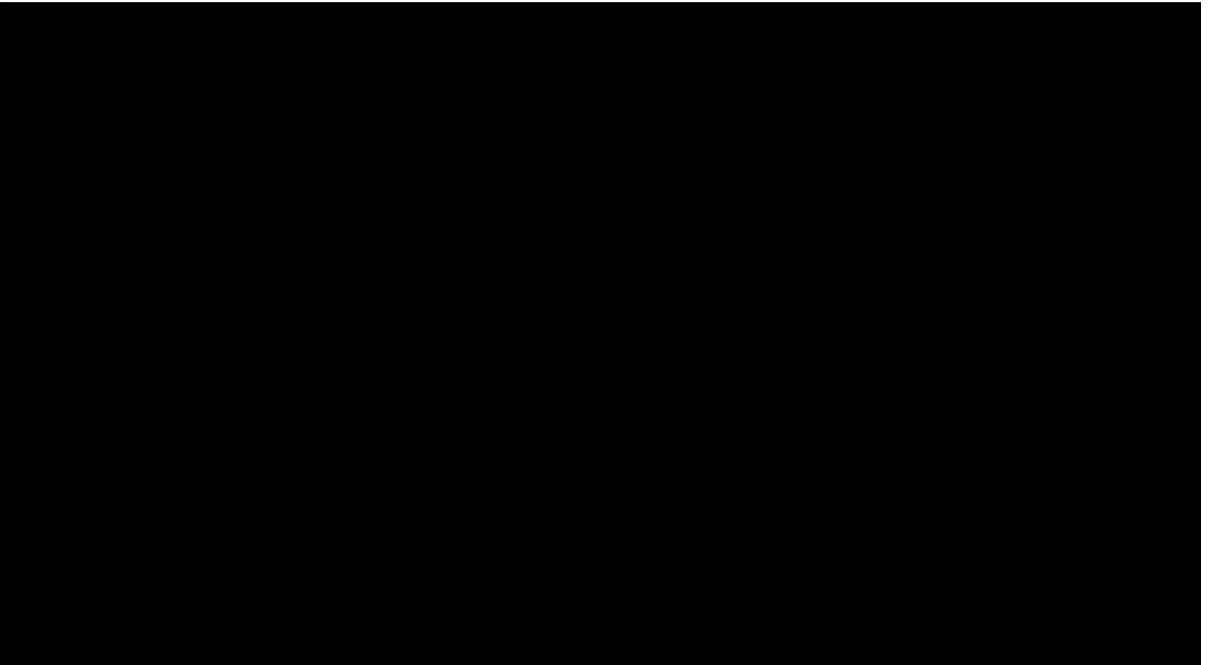


Figure 3. Detailed work packages

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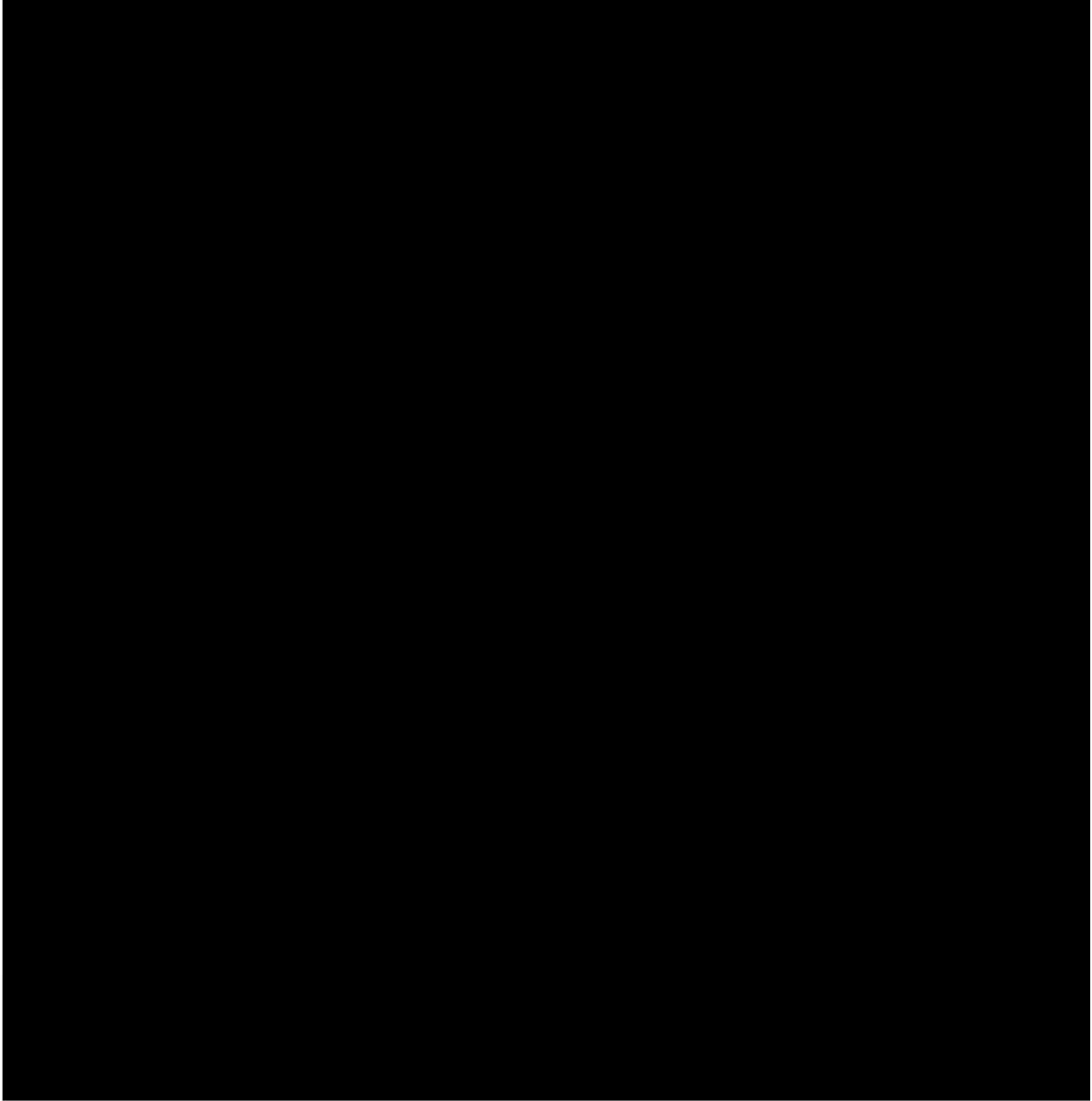


Figure 4. Processes of developing autonomous driving air cleaner

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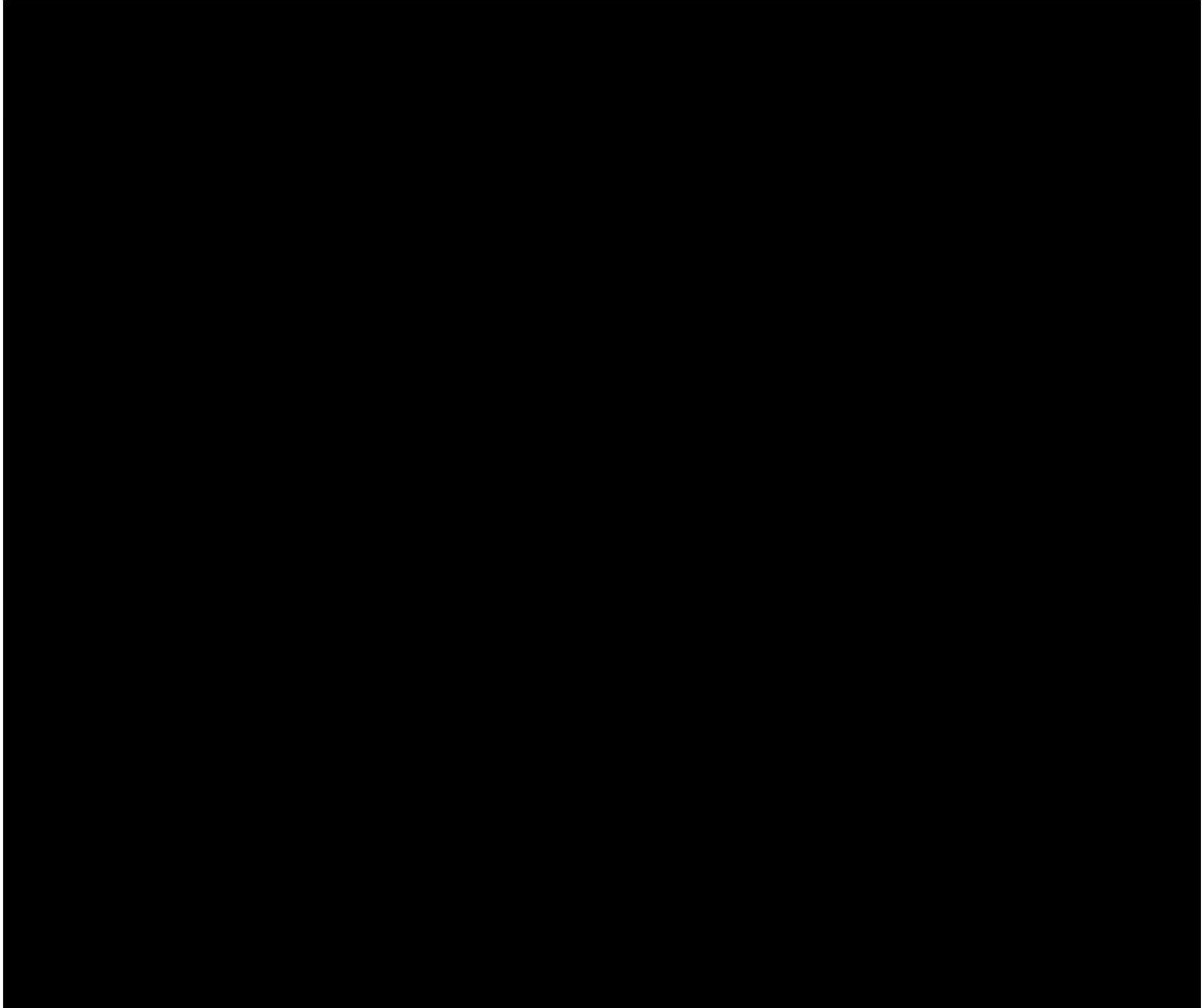


Figure 5. Processes of developing single and composite air cleaning modules

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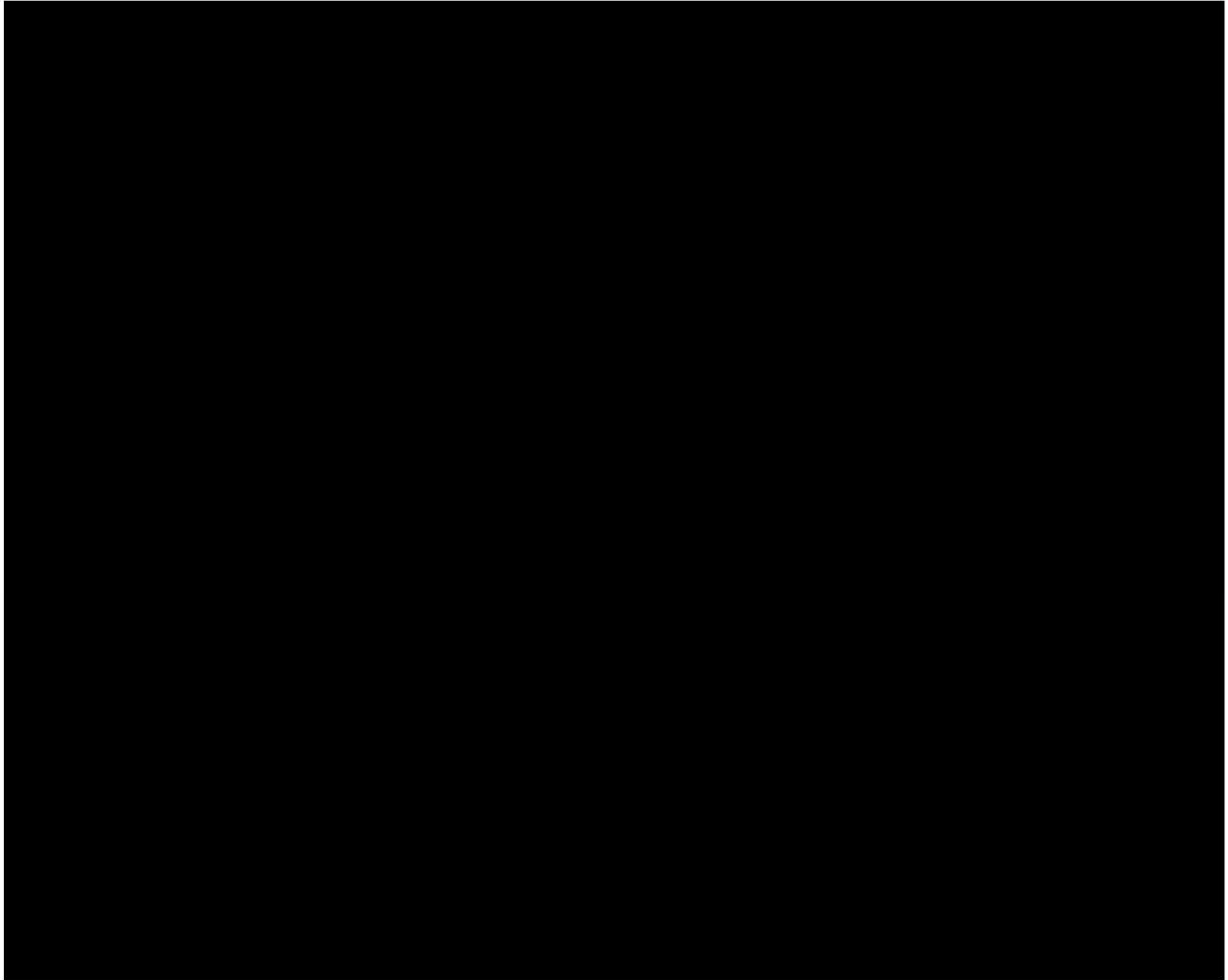


Figure 6. Processes of developing WSN technology for air quality monitoring

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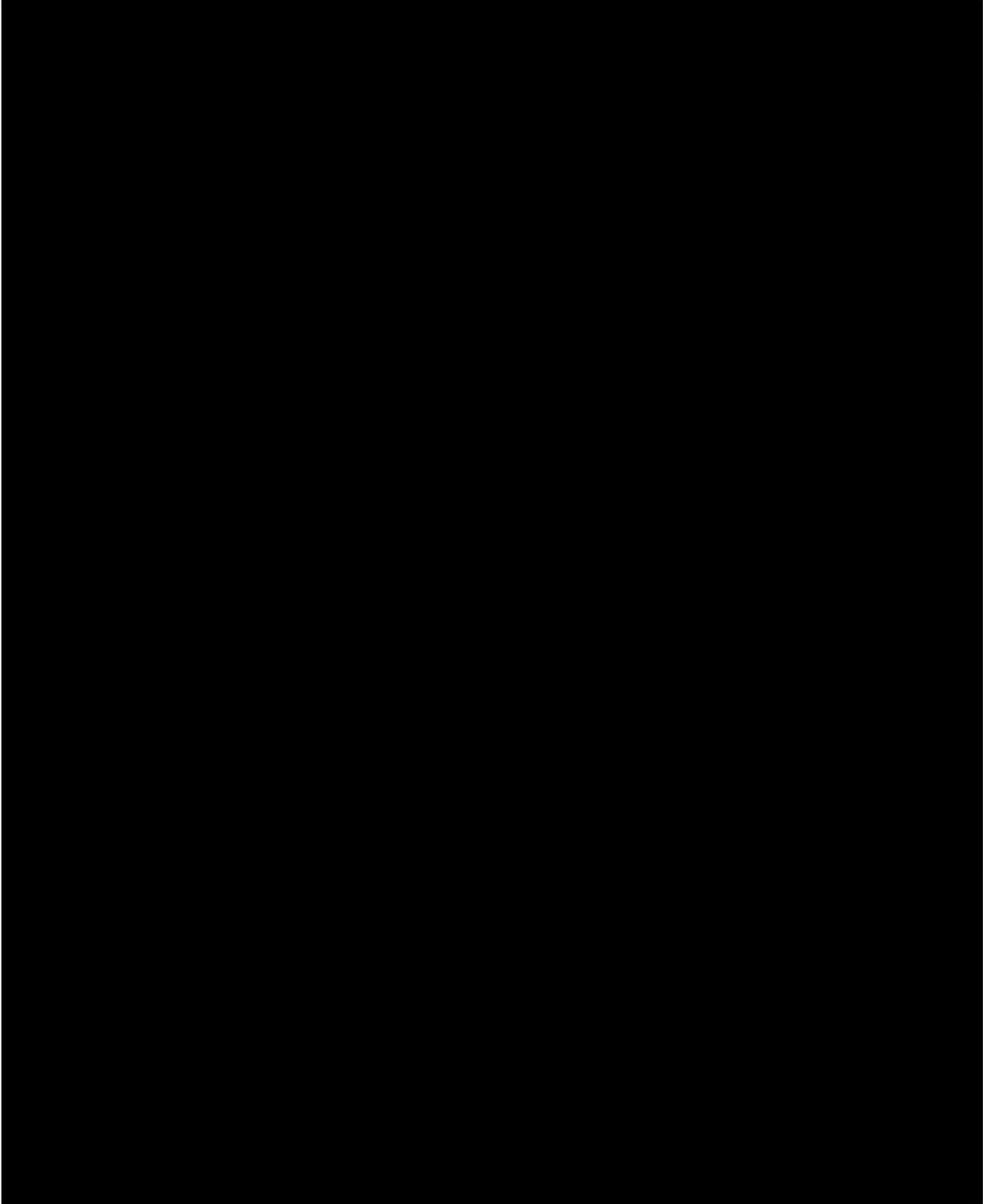


Figure 7. Wearable hybrid sensors position in the WP2 tasks/results scheme

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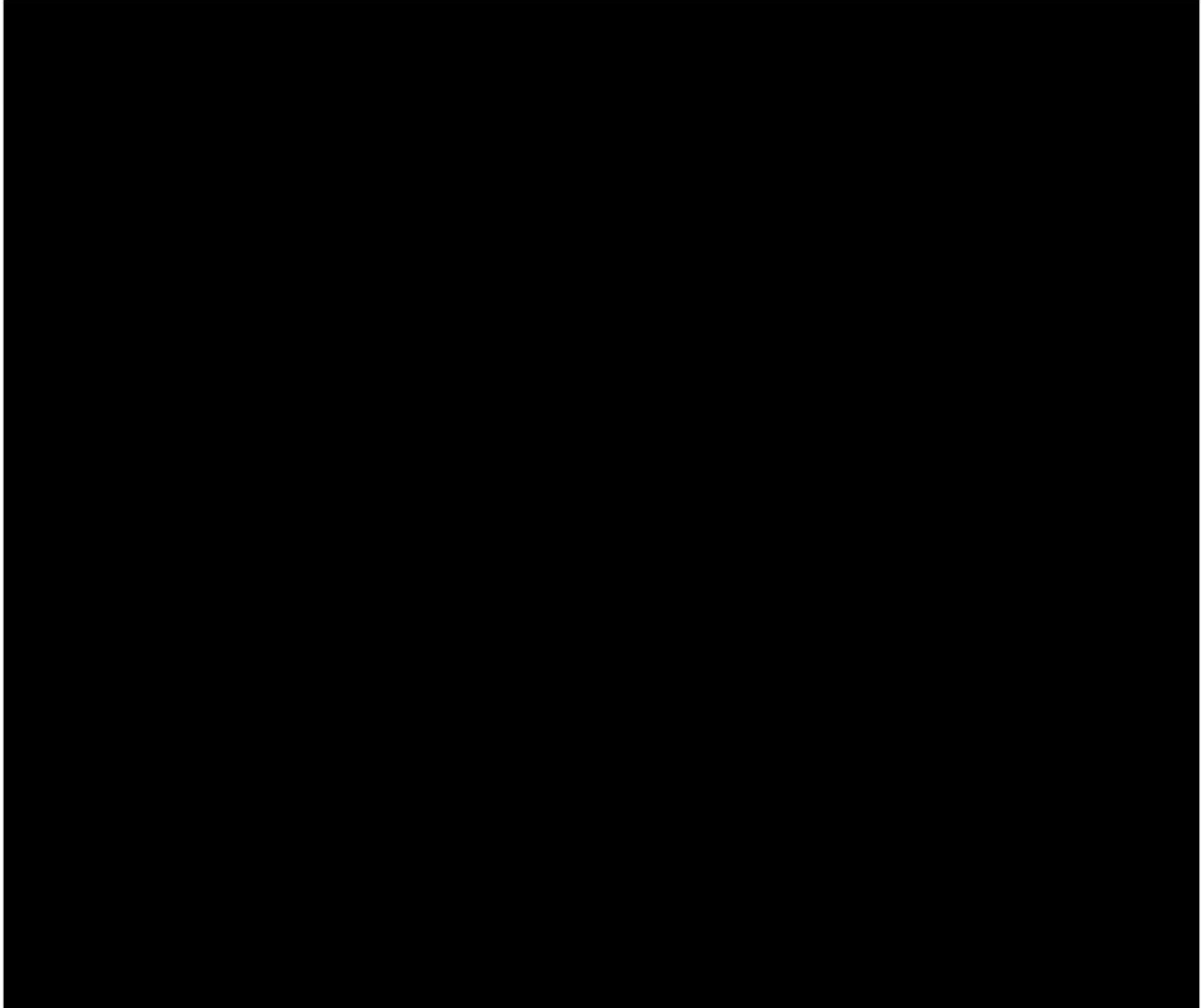


Figure 8. Edge device position in the WP2 tasks/results scheme

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Figure 9. Position of hybrid wearable device interface in the WP2 tasks/results scheme

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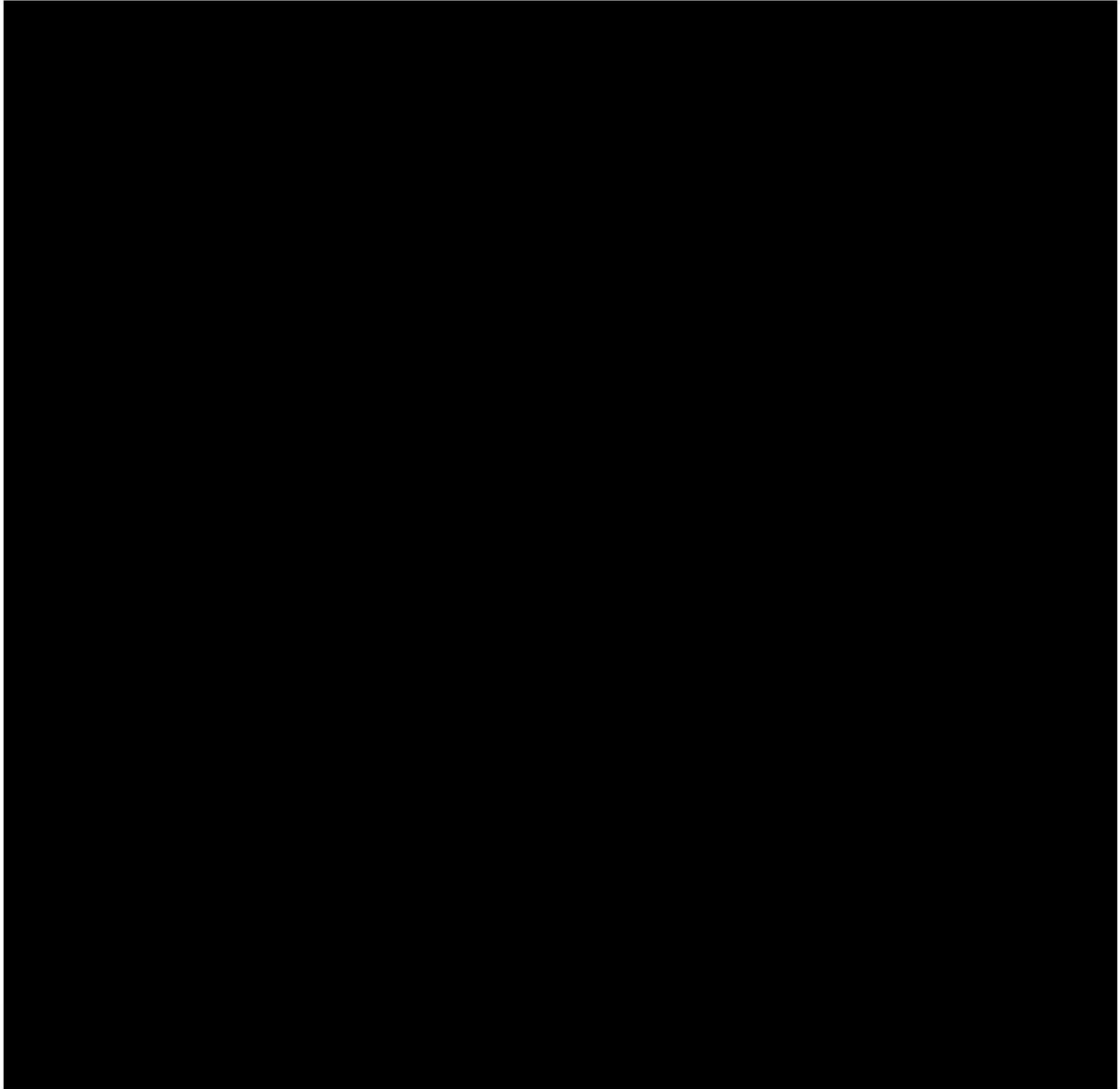


Figure 10. Concept for AI models for worker posture recognition

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Figure 11. Position of IoT platform for IoT data collection and on-site control in the WP2 tasks/results scheme

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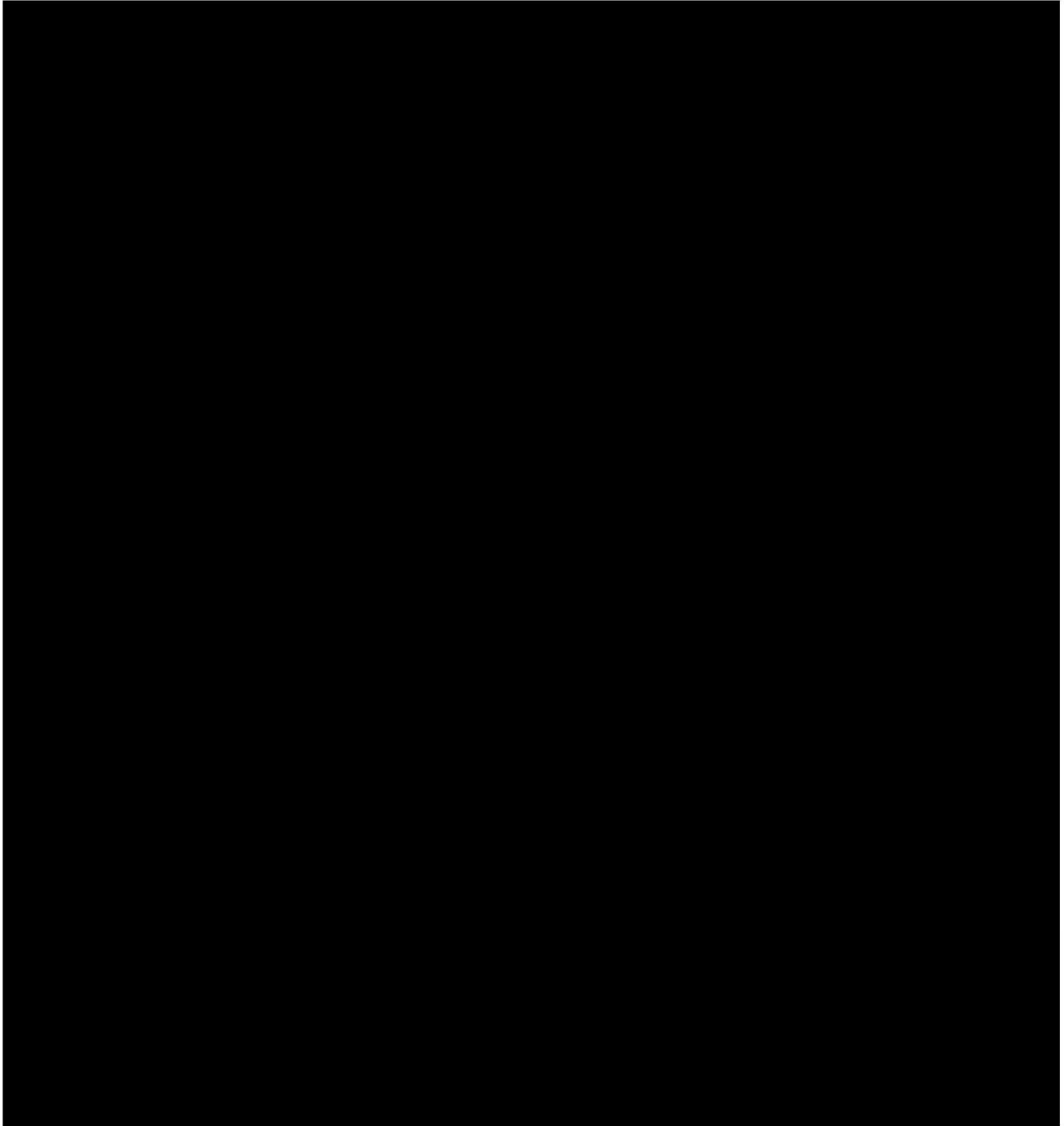


Figure 12. Concept for integration of digital twins and AI-models

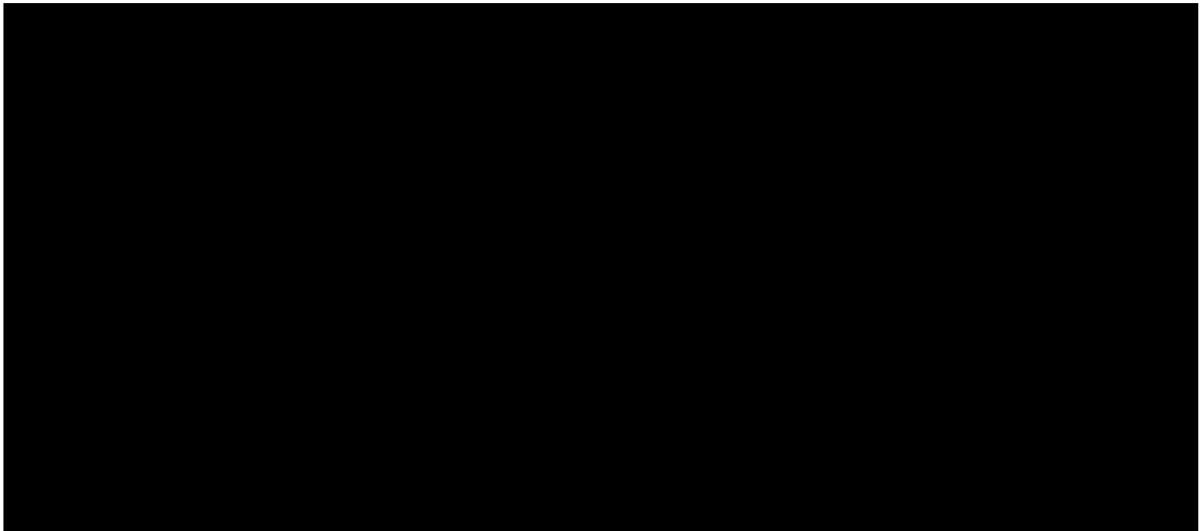
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Figure 13. Modes of cooperated automotive driving and context recognition



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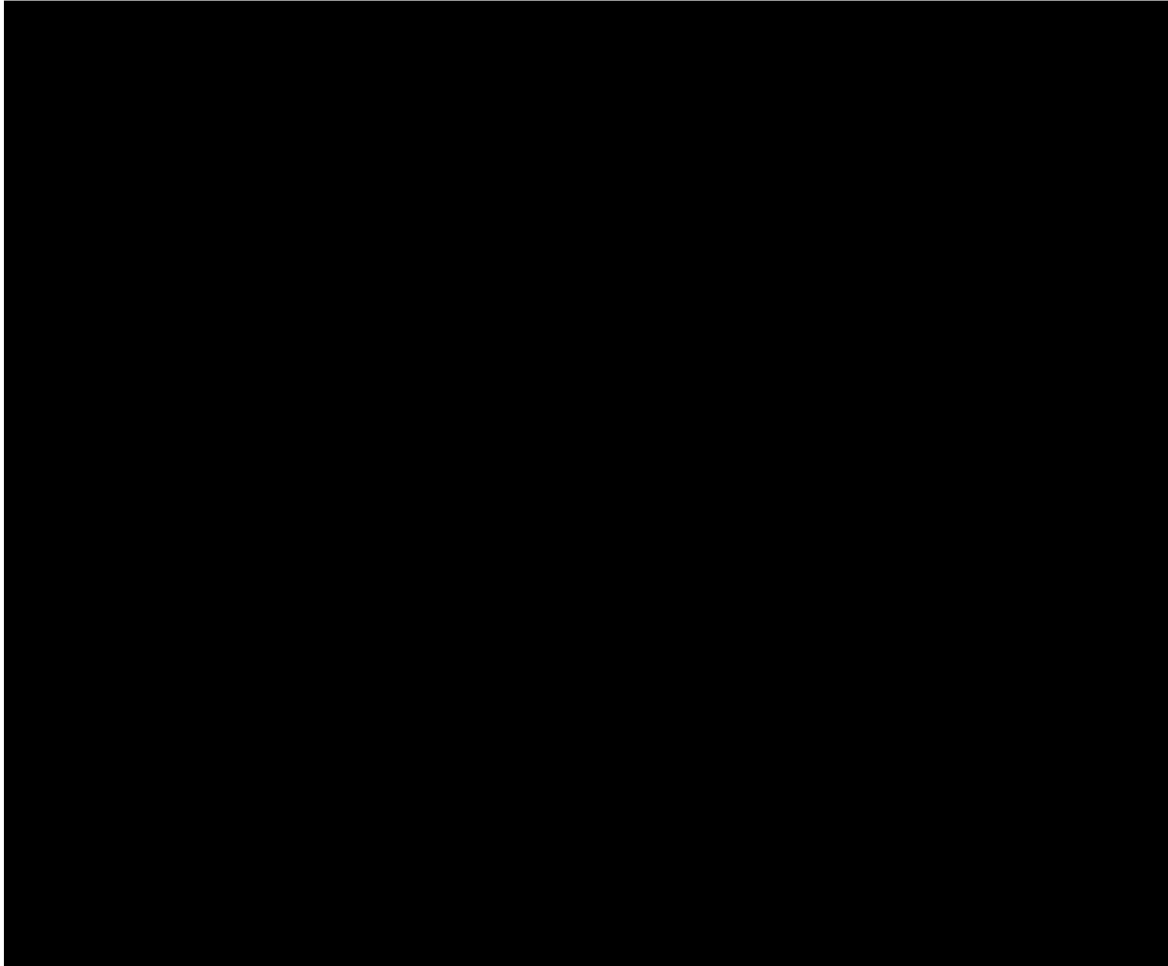


Figure 14. Big data validation and AI-models feedback frameworks

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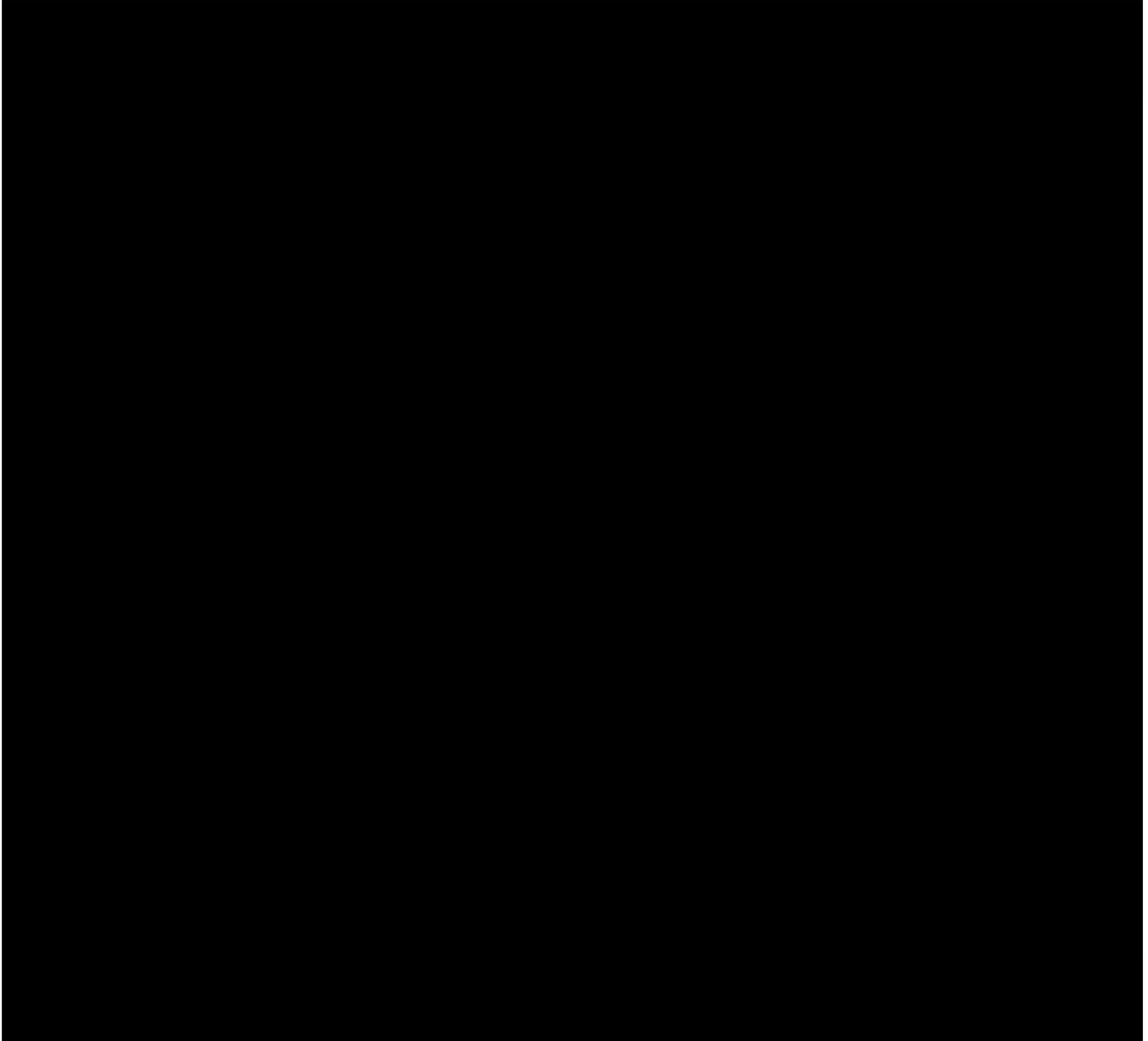
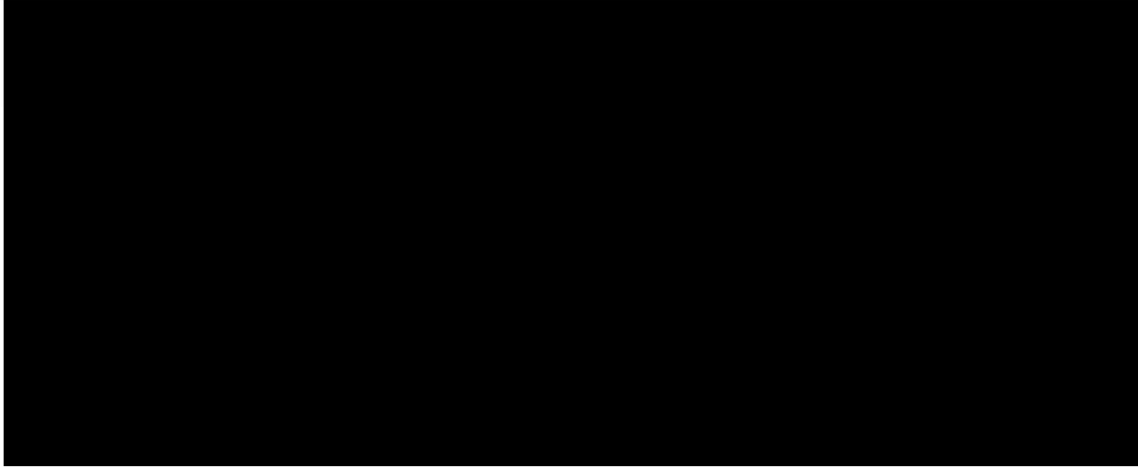


Figure 15. Framework of safety control application services

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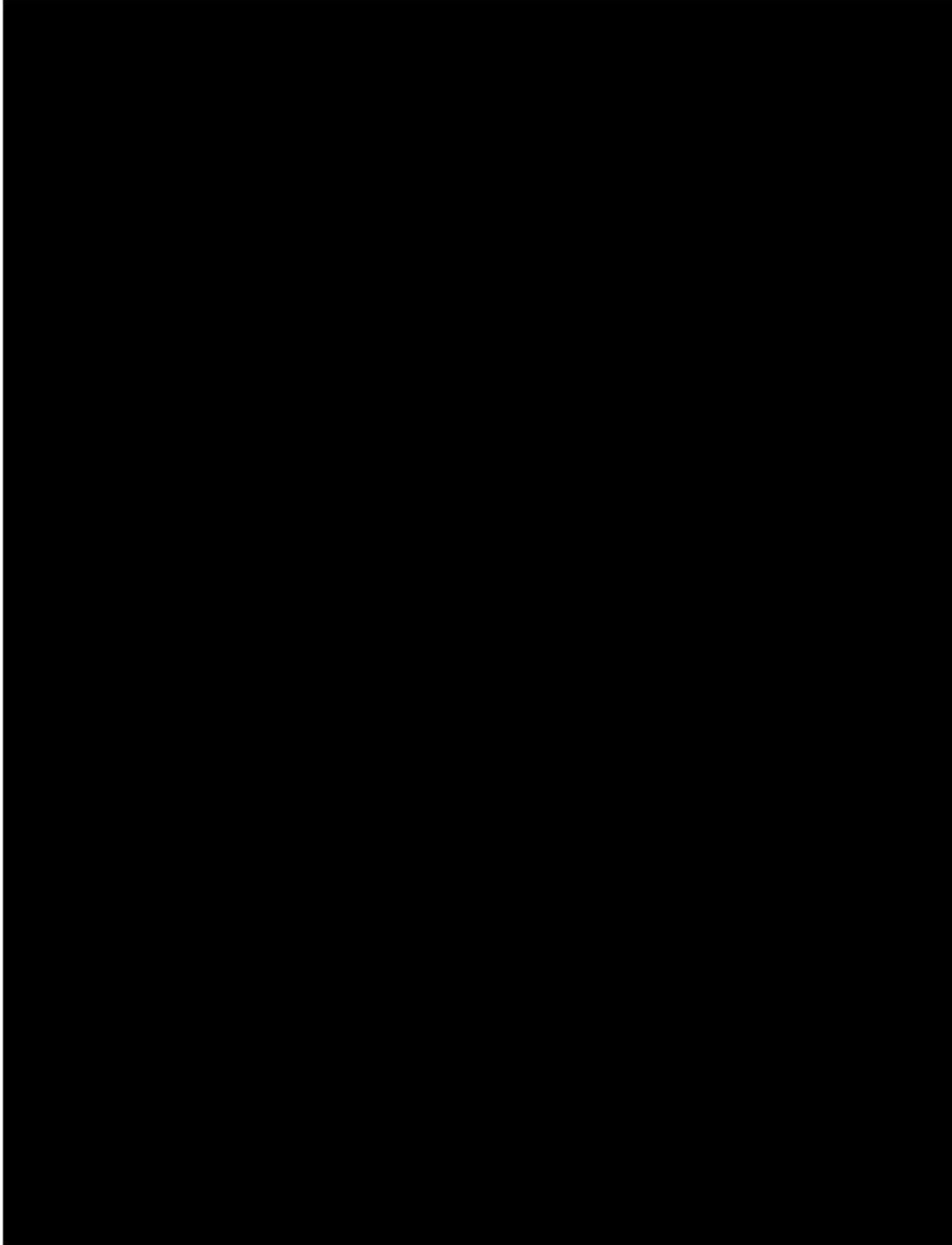
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2. Roles of each Lead Organization and Participating Organization

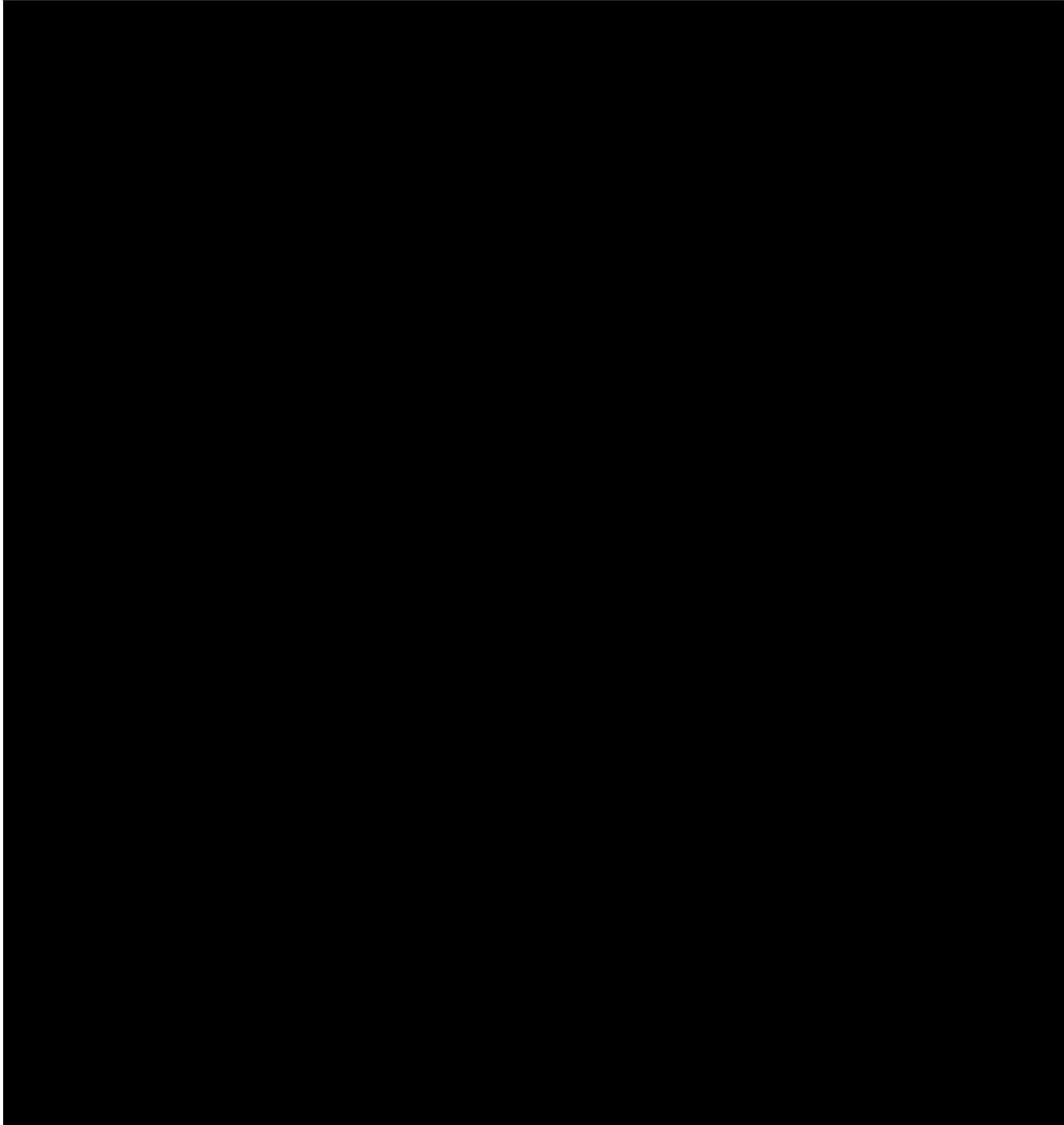


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3. Implementation Path

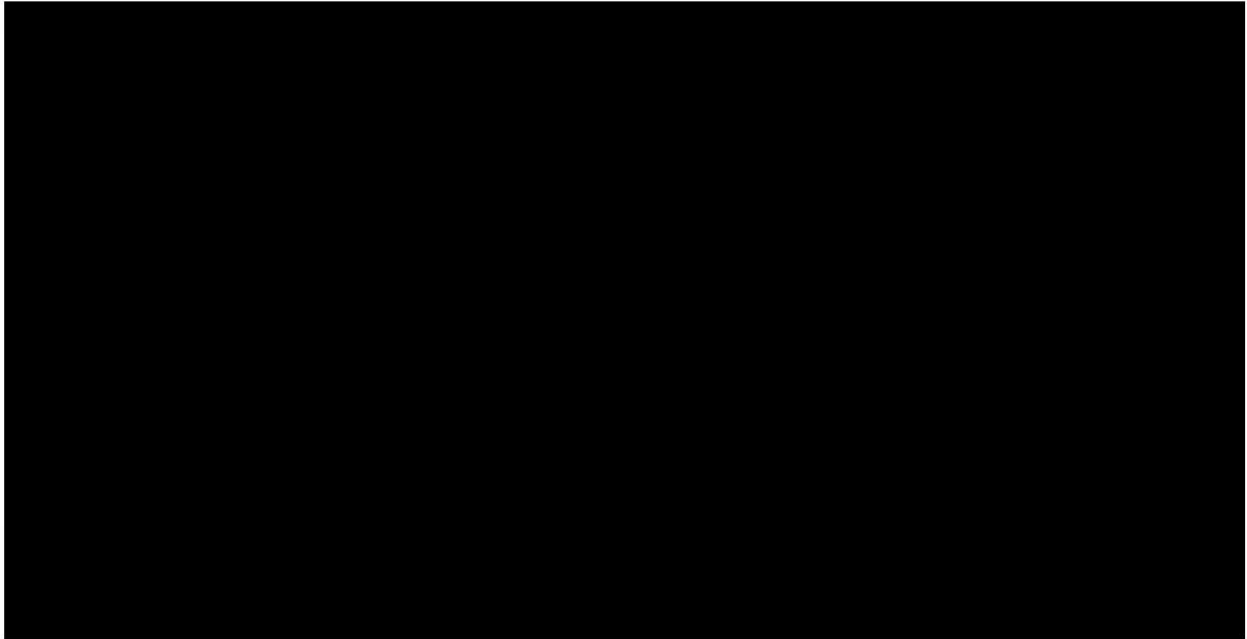
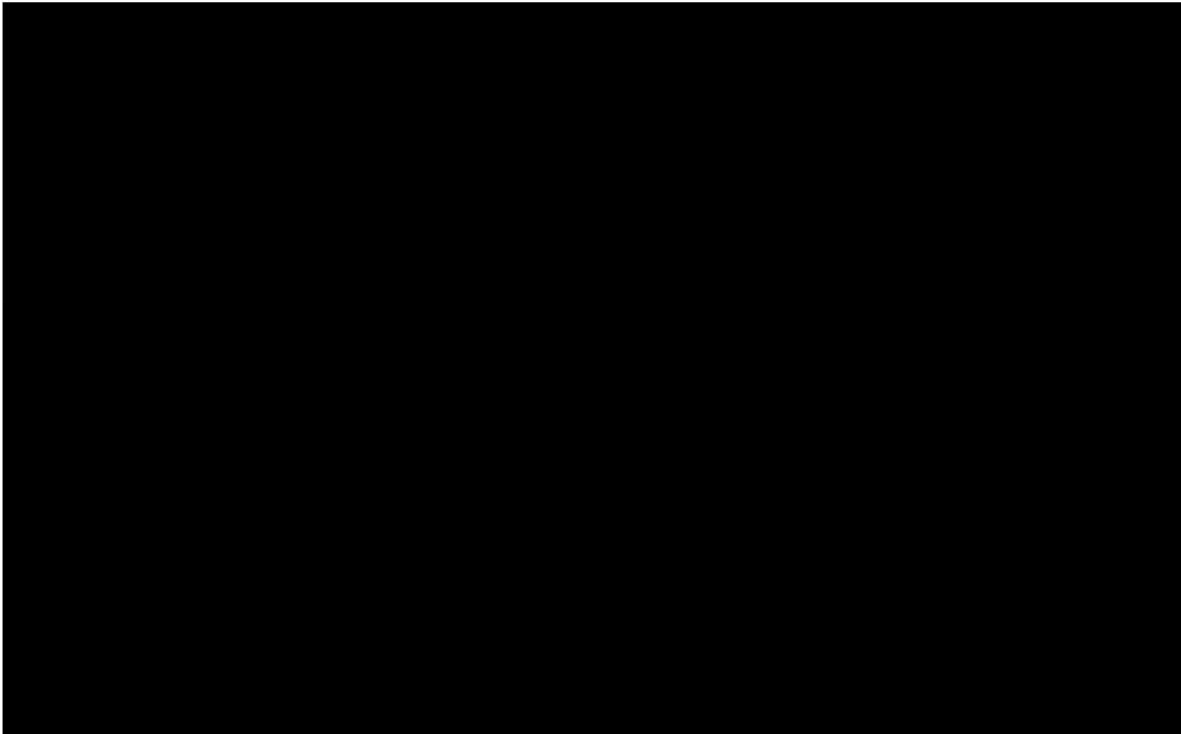


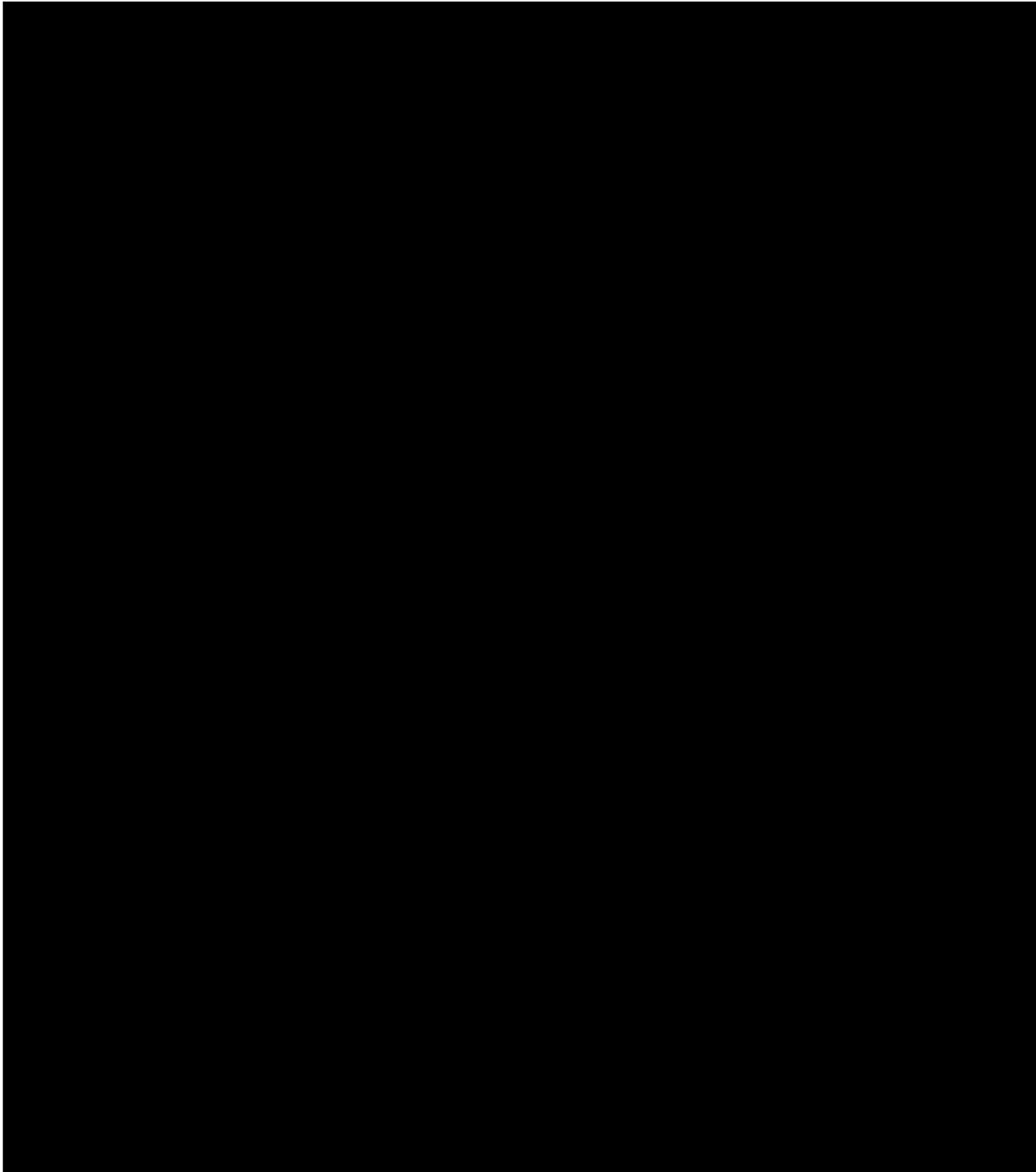
Figure 15. Implementation Path



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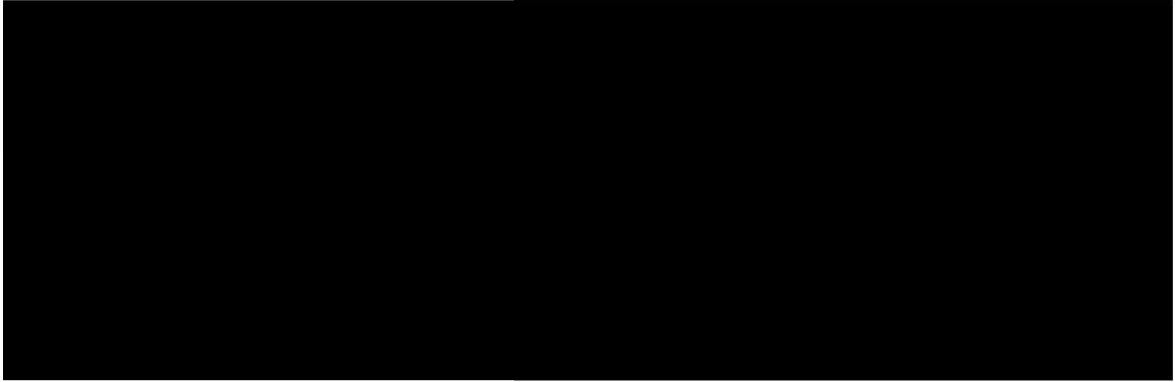
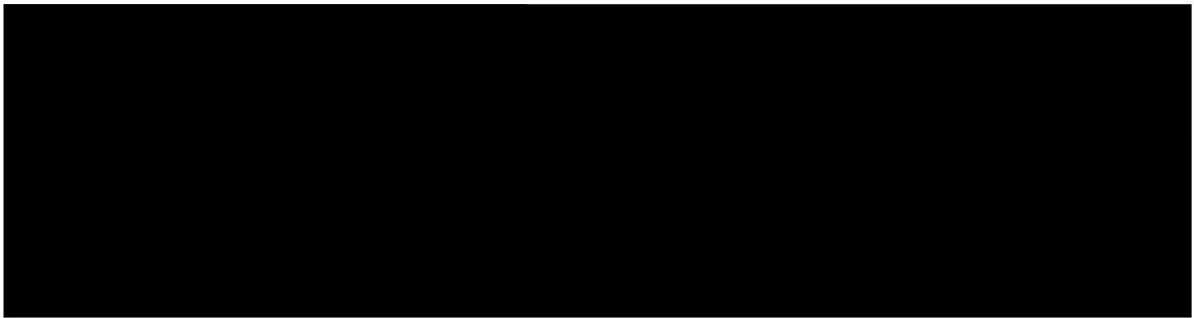
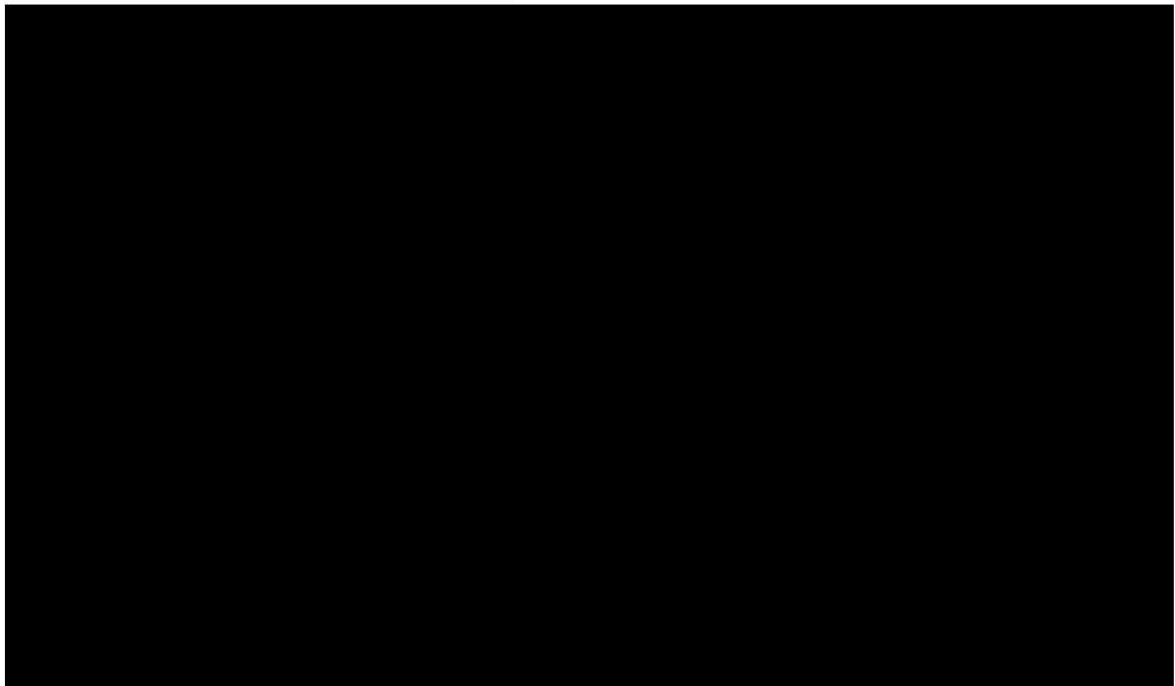


Figure 16. Test-beds



4. Basis for cooperation

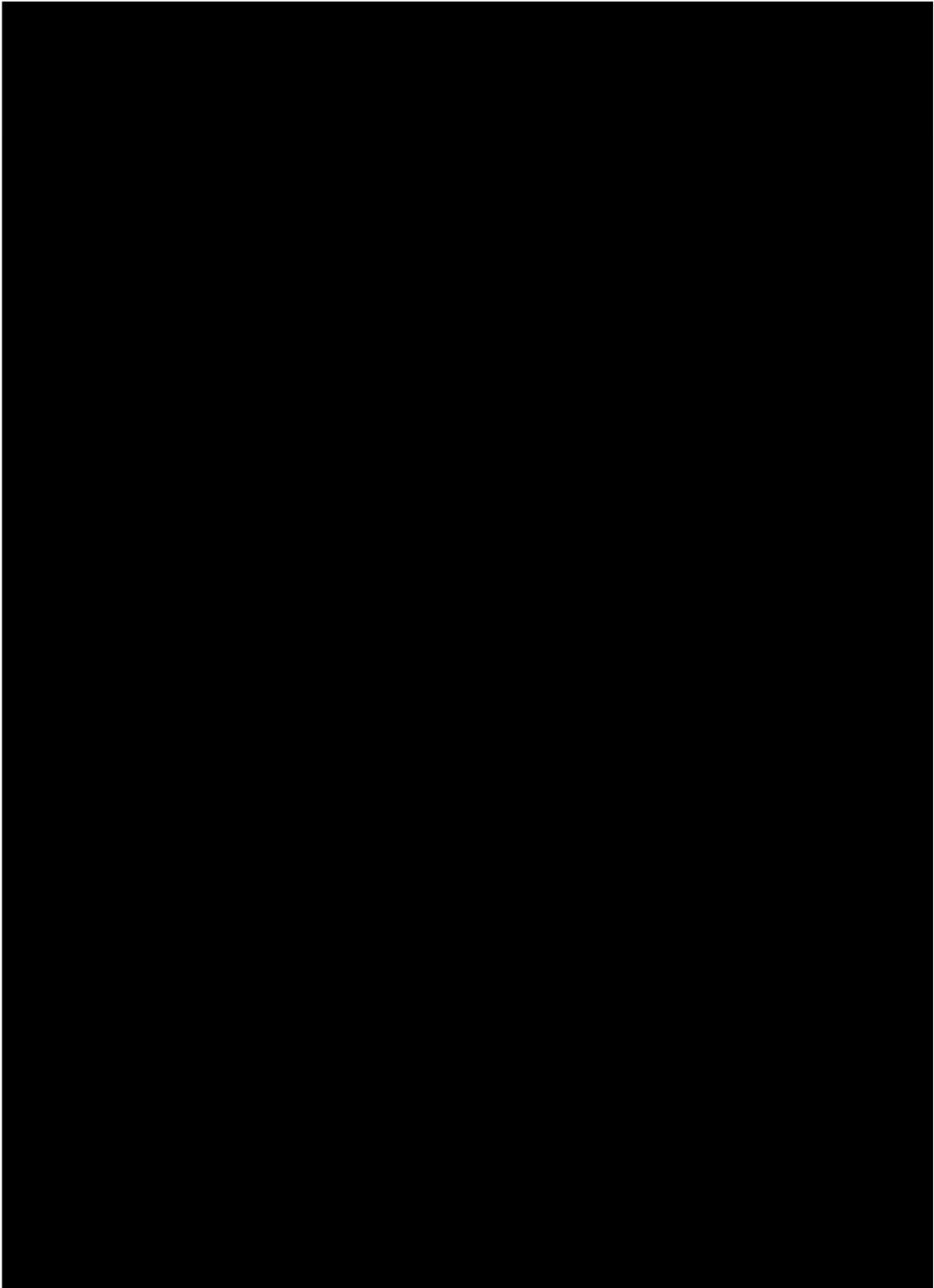


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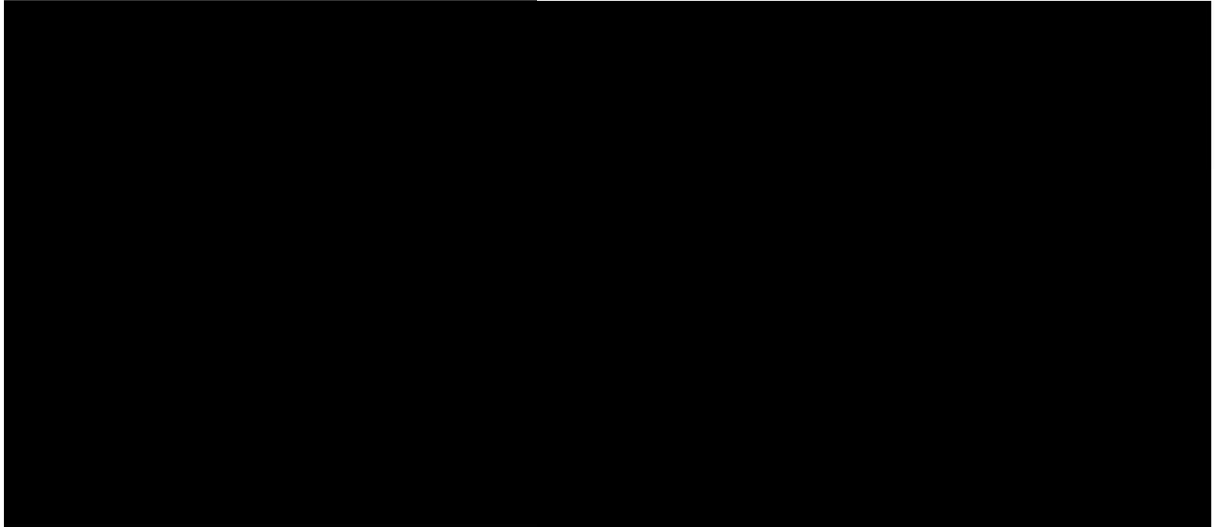
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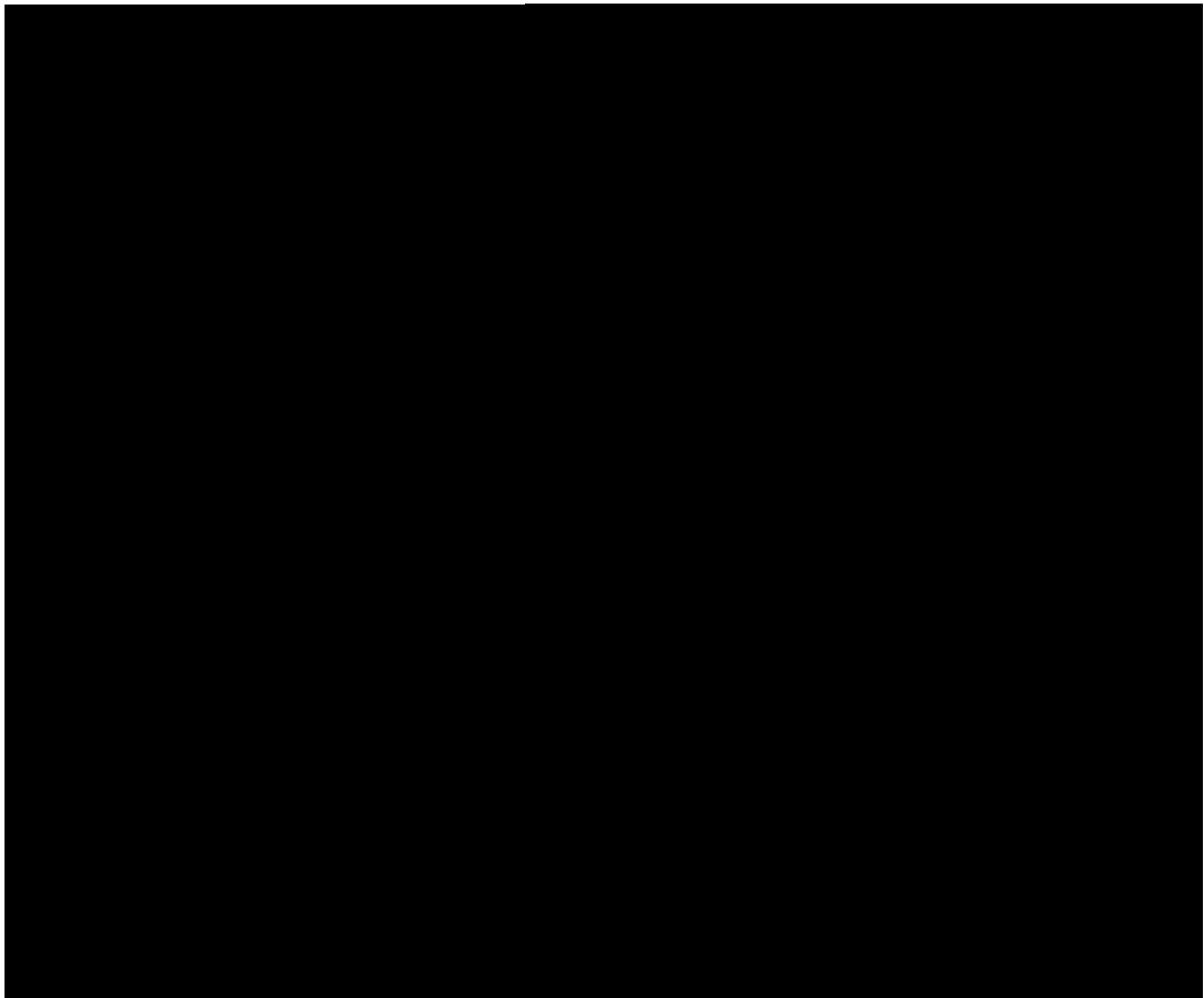
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5. Intellectual Property Rights

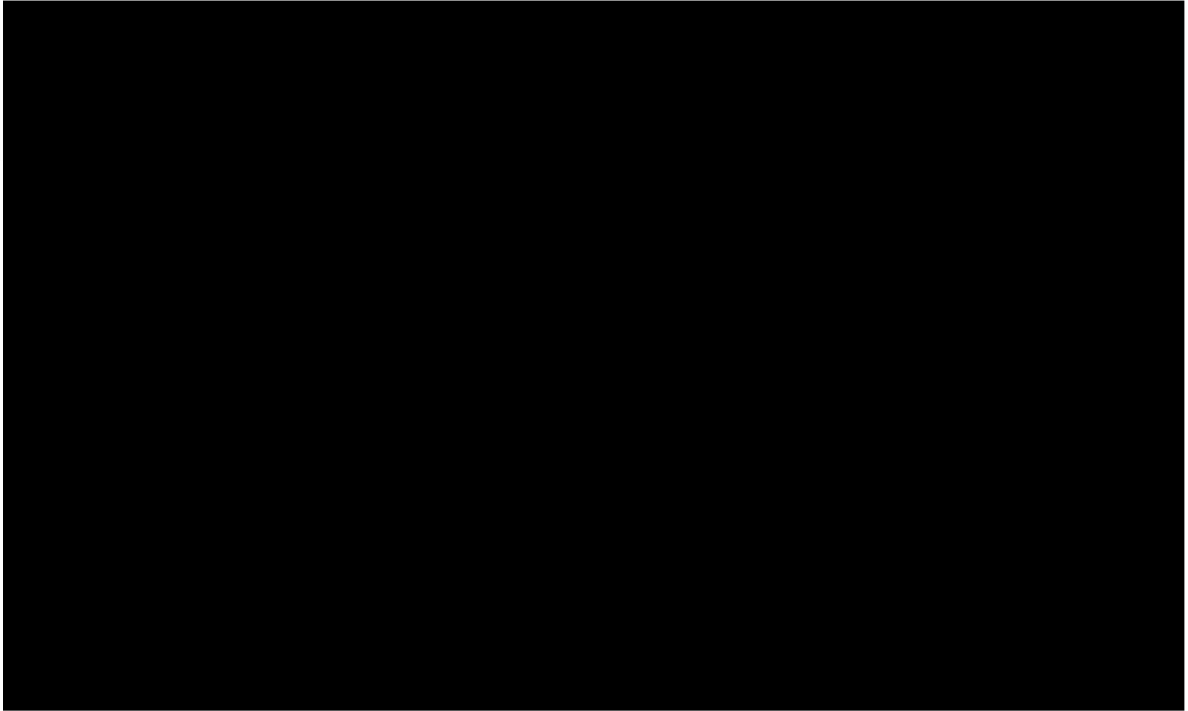


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4. Statutory representative/member of a statutory body/representative with authorization to sign on behalf of the organization (according to the commercial or other register).

(signature) (Date)
Principal Applicant on the Czech side

Pavel Benda
Managing Director
GABEN, spol. s r.o.

Gaben Hájkova 1, 702 00
spol. s r.o. Ostrava-Přivoz
Tel./fax: 596 117 402*
IČ: 19012021, DIČ: CZ19012021
Obchodní rejstřík: C/940 Ostrava s

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(signature)

(Date) 07. 07. 2022

Participation Organization on the Czech side

prof. RNDr. Václav Snášel, CSc.

rector

VSB-Technical university of Ostrava



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(signature) (Date) 07-07-2022
Participation Organization on the Czech side

doc. RNDr. Vojtěch Petráček, CSc.
rector
Czech Technical University in Prague

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Ing. Zdeněk Grepl Digitálně podepsal Ing.
Zdeněk Grepl
Datum: 2022.07.11
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(signature)

(Date)

Participant Organization on the Czech side

Ing. Zdeněk Grepl
Director
ENVitech Bohemia s.r.o.

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(signature) *(Date) 2022.07.08*
Principal Applicant on the Korean side

Yoon Soo Ahn
President
Shinsung E&G Co.,Ltd.



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(signature)

(Date) 22.07.12

Participation Organization on the Korean side

Jae Young Kim

President

Advanced Institute of Convergence Technology

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(signature)

A handwritten signature in black ink, appearing to be "S. Park", written over a horizontal line.

(Date) 22.07.12

Participation Organization

on the Korean side

Sunhyu Park

President

Research & Business Foundation, Sungkyunkwan University