IDEAL

INDOOR AIR QUALITY HEALTH

Scientific Strategy of the cluster

IDEAL Project
Coordinators

Version 1.0
31 August 2023

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1. EXECUTIVE SUMMARY

Cluster details

Cluster title	Indoor Air Quality and Health
Cluster acronym	IDEA/IDEAL
Dates and duration	September 1st 2022 – August 31st 2026 (48 months)
Horizon Europe call	HORIZON-HLTH-2021-ENVHLTH-02-02 Indoor air quality and health
Number of projects	7

IDEAL projects

PROJECT	TITLE	GA NUMBER
K-HEALTHinAIR	Knowledge for improving indoor air quality and health	101057693
SynAir-G	Disrupting Noxious Synergies of Indoor Air Pollutants and their Impact on Childhood Health and Wellbeing	101057271
LEARN	Evaluation on indoor air quality for children around Europe	101057510
TwinAIR	Indoor air quality for healthy living	101057779
InChildHealth	Identifying determinants for indoor air quality and their health impact in environments for children: measures to improve indoor air quality and reduce disease burdens	101056883
INQUIRE	Identification of chemical and biological determinants, their sources, and strategies to promote healthier homes in Europe	101057499
EDIAQI	Evidence Driven Indoor Air Quality Improvement	101057497

Cluster aim

The IDEAL cluster was created to optimise synergies, avoid overlaps and increase the impact of the projects selected for funding under the call *HORIZON-HLTH-2021-ENVHLTH-02-02 Indoor air quality and health*. The main cluster activities include the following:

1. Common cluster kick-off meeting of the participating projects
2. Annual cluster meetings and periodic reporting of joint activities
3. Common dissemination and communication activities
4. Thematic workshops/trainings on issues of common interest
5. Working groups on topics of common interest
6. Advisory board appointment

Document details

Deliverable Type	Report
Deliverable Title	Scientific Strategy of the cluster
Name of Lead Partners for this deliverable	SynAir-G and TwinAIR
Version	V1.0
Contractual delivery date	M12 (August 2023)
Actual delivery date	31 August 2023
Dissemination Level	Public
Purpose	This document outlines the scientific strategy of the IDEAL cluster. It defines the Working Groups that were established according to topics of common focus of the clusterprojects. The scientific strategy was discussed and agreed during the first three coordinatormeetings between DG RTD and the cluster coordination team.

Revision history

The following table describes the main changes done in the document since it was created.

REVISION	DATE	DESCRIPTION	AUTHOR (PROJECT)
V.0.1	02.08.2023	First draft	SynAir-G and TwinAIR
V.0.2	18.08.2023	Review of the first draft	K-HealthinAIR
V.0.3	24.08.2023	Second draft	TwinAIR
V.1.0	29.08.2023	Final version	TwinAIR

Disclaimer

2. INTRODUCTION

The **Scientific Strategy** of the IDEAL Cluster outlines the scientific strategy of the cluster. It defines the Working Groups that were established according to topics of common focus of the projects. The scientific strategy was discussed and agreed during the first three coordinator meetings between DG RTD (represented by the cluster officer) and the cluster coordination team (formed by the individual project coordinators).

This document was jointly prepared by SynAir-G and TwinAIR projects - being the starting cluster coordinators - with feedback from all cluster projects. The scientific strategy provides an overview of the cluster composition and mandate decided by the project coordinators and the EC Officer. It also describes the cluster governance, the working groups that were created on practical topics of shared interest among the projects, the cluster annual meetings & thematic workshops, and the reporting activities. The composition of the cluster International Advisory Board is also included.

3. SCIENTIFIC STRATEGY

3.1 Cluster Structure

The IDEAL cluster was created to optimise synergies, avoid overlaps and increase the impact of the projects selected for funding under the call *HORIZON-HLTH-2021-ENVHLTH-02-02 Indoor air quality and health*. The cluster was officially established on 1 September 2022 and it will be active for 48 months (as the duration of most projects), until 31 August 2026.

It was first comprised of six Horizon Europe projects (101056883 INCHILDHEALTH, 101057271 SynAir-G, 101057693 K-HEALTHinAIR, 101057499 INQUIRE, 101057510 LEARN and 101057779 TwinAIR). A few months later the project 101057497 EDIAQI joined the Cluster.

It is agreed by all founding cluster members that the cluster may establish cooperation with other relevant ongoing and potential future initiatives.

3.2 Cluster Mandate

The cluster mandate was discussed with the project coordinators on 4th March 2022 and was a final version was distributed per email on 7th March 2022. The final version of the cluster mandate was included as a specific task in the Description of Action (DoA) of each project's grant agreement. It is described in the document 'Modalities of Implementation of the Cluster. The common cluster activities are described in Table 1.

Table 1. Common cluster activities

Activity	Description
Common kick-off meeting	Organized in cooperation between DG R&I and the cluster.
Annual cluster meetings and periodic report of joint activities	To be delivered at each reporting period.
Common dissemination and communication activities	These activities include: Common dissemination and communication strategy of the cluster, Cluster web portal and visual identity, Cluster brochure, cluster newsletters, Shared Stakeholder List, Shared individual Data Management Plans, Policy Strategy of the cluster, Joint policy briefs and Scientific strategy of the cluster

The cluster deliverables with their delivery dates and lead projects are presented in Table 2.

Table 2. IDEAL cluster deliverables

Deliverable	Lead Project(s)	Delivery Date
Common web-portal and visual identity	K-HealthinAir	M9
Joint visual identity	LEARN	M9
Communication & Dissemination Strategy	LEARN, InChildhealth	M9
Social Media	TwinAIR, INQUIRE, SynAir-G	M13 (launch)

Cluster Brochure	INQUIRE	M12
Newsletter - No.1	LEARN	M18
Newsletter - No.2	TwinAir	M36
Newsletter - No.3	InChildHealth	M54
Policy Briefs	SynAir-G	M18, M32, M46
Shared stakeholder list	TwinAir	M18
Data Management Plans	TwinAir, INQUIRE	M12
Policy strategy of the cluster	SynAir-G, K-HealthinAir	M12
Scientific strategy of the Cluster	All projects	M12

3.3 Cluster Governance

According to the Modalities of Implementation of the Cluster, the cluster will be coordinated by the six project coordinators and their deputies (Cluster Coordinating Team). The cluster leadership will be rotated every 8 months, as indicated in Figure 1.

Figure 1. IDEAL cluster governance

The European Commission (DG RTD) is in charge of the oversight and good information flow, enabling joint agreements and long-term consistent development of the cluster. Initiated by DG RTD and the Cluster Coordination Team, triannual online meetings are being organised between the Cluster Coordination Team and DG RTD to discuss the progress of each project as well the of the working groups activities.

3.4 Cluster Working Groups

The Strategy of the Cluster was delineated in the document of the Cluster Modalities of Implementation and further discussed during the subsequent Coordinator meetings between DG RTD and the cluster coordination teams, that took place face to face on 10 October 2022 (kick-off meeting), and online on 12 December 2022, 22 March 2023 and 14 June 2023.

Following the kick-off meeting, a scoping exercise was performed to identify the topics of common focus and interests of the participating projects. All coordinators reported on these aspects, as shown in Table 3. From this exercise, it was concluded that there were several areas of common activity that would benefit from cooperation among the projects. This included microorganisms that are considered in the study (particularly bacteria and fungi), sensors both of chemicals and particulate matter, types of testing (e.g., in-vitro testing), health consequences (particularly respiratory and cognitive),

remediation strategies for air quality improvement (e.g., air filtration). Most projects focus on air quality effect on children and include schools (as well as houses, public transport means etc.) among the indoor spaces evaluated.

Participant engagement and risk assessment are not commonly focused by the cluster projects.

Table 3. Aspects related to IDEAL cluster per project

Project	Microorganisms considered		Sensors used for		In vitro testing
	Bacteria and Fungi	Virus	Chemicals	PMs	
InChildHealth	X	X	X	X	X
INQUIRE	X		X	X	X
K-HealthinAir	X		X	X	X
LEARN	X		X	X	X
SynAirG	X	X	X	X	X
TwinAIR	X	X	X	X	X

	Outcome type				Remediation Strategy		Risk Assessment
	Respiratory	Cognitive	Other	Biomarkers	Air filtration	Other	
InChildHealth	X	X			X	X	X
INQUIRE	X	X	X	X	X	X	X
K-HealthinAir	X	X			X	X	
LEARN		X		X	X		
SynAirG	X	X		X	X		
TwinAIR	X	X			X		X

	Participant engagement		Focus on children		Pilot study types				
	Questionnaires	Other	Cohort	Cases	Schools	Houses	Public Buildings	Hospitals or nurseries	Outdoor
InChildHealth	X	X	X		X	X	X		X
INQUIRE	X		X	X		X			X
K-HealthinAir	X				X	X	X	X	
LEARN			X		X				X
SynAirG		X	X	X	X				
TwinAIR	X	X	X		X	X	X	X	X

The above priorities complemented by the discussion during the meetings, led to the agreement of establishing several working groups towards the implementation of the Cluster scientific strategy. These groups include topics related to Policy, Communications, Data management, Guidelines and Standards, Sensors, Health Outcomes and In-vitro models. Table 4 summarizes the seven cluster Working Groups with their respective WG leaders.

Table 4. IDEAL cluster Working Groups

Working Group	Lead Project
1. Science translation for policy and practice	SynAirG, K-HealthinAir
2. Data analysis/management and protection	TwinAir, INQUIRE
3. Communication and Dissemination	Inchildhealth, LEARN
4. Guidelines	SynAir-G
5. Sensors	INQUIRE

6. Health outcomes	SynAir-G
7. In-vitro models	LEARN

The European Commission's Joint Research Centre (JRC) is collaborating with WG2 on Data analysis/management and protection to facilitate the harmonisation of data collection and format compatibility with Information Platform for Chemical Monitoring (IPCHEM). Other WGs may also collaborate with relevant institutions and authorities, as may be decided along the way.

It was agreed that the Working Groups will meet regularly to identify potential synergies. It was also agreed that the workshops planned within the Cluster operation will take place after the first year and following the needs and requests of the Working Groups as well as the progress of their work.

The Working Group leaders are invited to the regular Coordinator meetings, where they report their progress.

3.5 Cluster Annual Meetings and Thematic Workshops

The Cluster Coordination Team will organise at least four thematic workshops of common interest. Nevertheless, additional workshops may be further organized if deemed necessary or desirable. The themes and projects responsible for the workshops are under discussion within the Cluster and the time plan annual meeting and workshop plan is to be finalised by the end of September 2023.

3.6 Cluster Reporting

Each project will include in its Periodic Report a common chapter on cluster activities. This chapter will be prepared by the Cluster Coordination Team, under the leadership of the rotating cluster leaders. In this report, a description of the work developed by the WGs will be included. The responsible projects for each reporting period are:

- First periodic report: SynAirG / TwinAir (M1-M18);
- Second periodic report: Inchildhealth / LEARNN (M19-M36);
- Final periodic report: K-HealthinAir / INQUIRE (M37-M48).

A 2–3-hour meeting will take place between the cluster projects and DG RTD after the end of each reporting period to present the deliverables that have been submitted as part of the cluster activities.

3.7 Cluster International Advisory Board

The International Advisory Board (IAB) will connect the cluster to significant initiatives in the field of indoor air quality and provide scientific and policy related advice. The IAB comprises 6 members nominated from the IAB of the projects and covering specific areas identified as key areas by the cluster coordinators. IAB composition was decided by the Cluster Coordination Team in month 6. Table 5 presents the composition of the International Advisory Board.

Table 5. Composition of IDEAL Advisory Board

Name	Country	Proposed by
Constantinos Sioutas	USA	InChildHealth
Sophia Spiliotis	Germany	KHealthInAir

Stylianos Kephalopoulos	Italy, IPCHEM	EC
Argyris Tzouvelekis	Greece	TwinAIR
Carlos Santos-Burgoa	USA	LEARN
Joeri Rogelj	UK	SynAir-G

ANNEX - IDEAL CLUSTER ACTIVITY AND DELIVERABLE TIMEPLAN

This annex presents the timeplan of all cluster activities and deliverables. The cluster events include the kick-off meeting, the final event, the annual cluster meetings and workshops. The timeplan of the annual meetings and workshops is under discussion between the project coordinators and it will be finalized by the end of September 2023. The activity duration is indicated in green color, the event in blue, the deliverable delivery month in green and the milestone delivery month in orange.

The timeline spans M1–M48 (sept 2022 – aug 2026).

#	IDEAL CLUSTER	Project Leader	Projects involved (SynAirG / TwinAir / Inchildhealth / LEARN / K-HealthinAir / INQUIRE)	Timeline markers
1	**Management of the IDEAL Cluster (All Projects)**			
1.1	Cluster Governance	All Projects	X X X X X X	Phases: SynAirG, TwinAir, InChildHealth, LEARN, K-HealthinAir, INQUIRE
1.2	Kick-off Meeting	SynAirG	X X X X X X	E (M2)
1.3.1	Annual Cluster Meeting 2023	TwinAIR	X X X X X X	E (Month to be decided)
1.3.2	Annual Cluster Meeting 2024	InChildhealth	X X X X X X	E (Month to be decided)
1.3.2	Annual Cluster Meeting 2025	LEARN	X X X X X X	E (Month to be decided)
1.3.3	Final Event 2026	K-HealthinAir & INQUIRE	X X X X X X	E (M48)
1.4	Definition of Advisory Board	All Projects	X X X X X X	M (M9)
1.5	Scientific Strategy for the Cluster	All Projects	X X X X X X	D (M11)
1.6	Thematic workshops	All Projects	X X X X X X	E (Month to be decided)
1.7.1	First Periodic Report	SynAirG & TwinAIR	X X X X X X	D (M18)
1.7.2	Second Periodic Report	InChildhealth & LEARN	X X X X X X	D (M36)
1.7.3	Final Periodic Report	K-HealthinAir & INQUIRE	X X X X X X	D (M48)
2	**WG1 - Science Translation for policy and practice (SynAirG, K-HealthinAir)**			
2.1	Policy Briefs	SynAirG	X (SynAirG), X (INQUIRE)	D (M18), D (M32), D (M47)
2.2	Policy Strategy for the Cluster	SynAirG & K-HealthinAir	X X X X X X	D (M12)
3	**WG2 - Data analysis/management and protection (TwinAir, INQUIRE)**			
3.1	Data Management Plan for the Cluster	TwinAIR & INQUIRE	X X X X X X	D (M12)
4	**WG3 - Communication and Dissemination (Inchildhealth, LEARN)**			
4.1	Common web-portal	K-HealthinAir	X X X	D (M9)
4.2	Joint visual identity	LEARN	X	D (M9)
4.3	Communication and Dissemination Stratey for the Cluster	LEARN & InChildhealth	X X X	D (M9)
4.4	Cluster Brochure	INQUIRE	X	D (M12)
4.5	Joint Stakeholders list for communication/dissemination (living document)	TwinAIR	X X X X X X	D (M18)
4.6	Social Media Management	SynAirG & INQUIRE & TwinAIR	X X X X X X	
4.7	Newsletters	LEARN & TwinAIR & InChildhealth	X X X X X X	D (M18), D (M32), D (M47)

CAPTION
- (grey) Activity duration
- E — Event
- D — Deliverable
- M — Milestone