



**| WHITEPAPER**  
**iMO-LEARN brings**  
**gamification and embodied**  
**learning in the classroom**

About the importance of  
movement in the classroom.  
Including scientific study results & use cases



## **BACKGROUND**

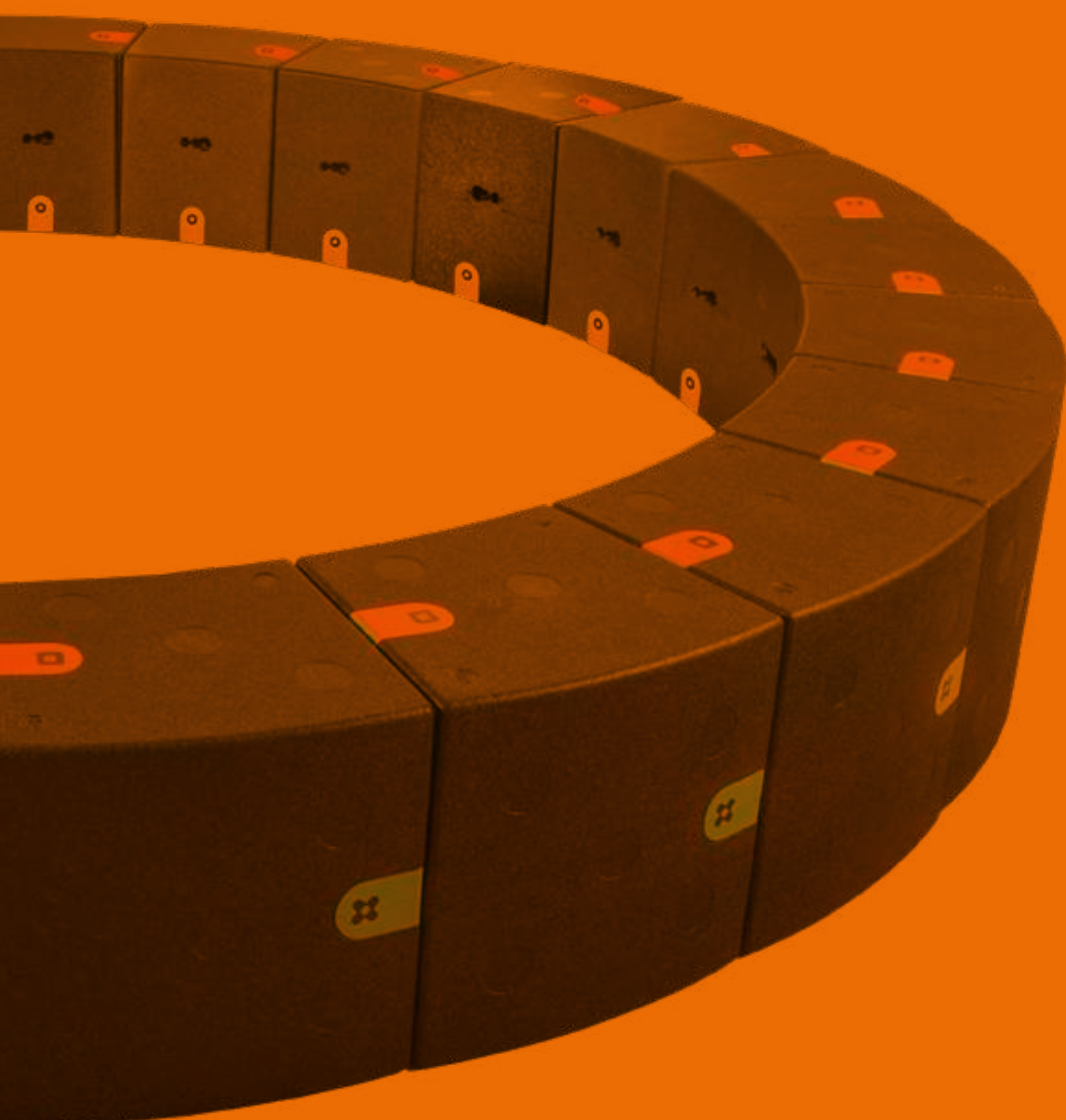
This Whitepaper aims to give schools guidance on how to introduce gamification and movement in the classroom to improve learning outcomes. First, you will get insight in the correlation between movement, school performance and well-being of the children. The school plays a key-role in encouraging children's physical activity.

Second, you will discover how iMO-LEARN - a light-weight box with an integrated sensor - integrates more movement in daily lesson activities. Then, we dive into a scientific study about iMO-LEARN's influence on student engagement. Finally, you will get practical tips for successfully implementing embodied learning in your school.

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## INTRODUCTION

### **About movement, performance and wellbeing in the classroom**

**Children don't move enough at school. They spend most of their days simply sitting on their chair, which has negative consequences on their health. That's why i3-Technologies created iMO-LEARN, a smart piece of furniture that makes sure students are physically active while learning.**

About 80% of school-age children only practice physical activities & sports in school<sup>1</sup>. Nonetheless, their movements at school are often limited to physical education lessons, play time and maybe movement interludes. Students are forced to sit still on their chairs, although moving actually has many positive effects on health, as it:

- Increases the ability to ignore distractions
- Allows students to memorize and use information
- Increases cognitive flexibility, meaning students can understand all possible options and alternatives
- Helps develop brain structures
- Increases the production of serotonin in our brain, which is believed to help regulate mood and social behavior.

The school environment naturally plays a key role in the development of physical education and promotion of physical activity. Therefore it is necessary to find innovative ways to bring movement into the classroom. (Dogger-Stichter, 2007). Some might think that making more time available during lessons for students to move is only possible at the expense of valuable class time. But research has proven that this doesn't lead to fewer educational achievements. On the contrary, there's a positive relationship between physical activity and students' behavior in the classroom, their executive abilities, IQ, general school performance, mental function and wellbeing.

### **What is embodied learning?**

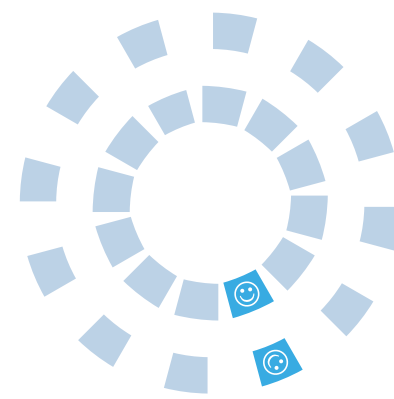
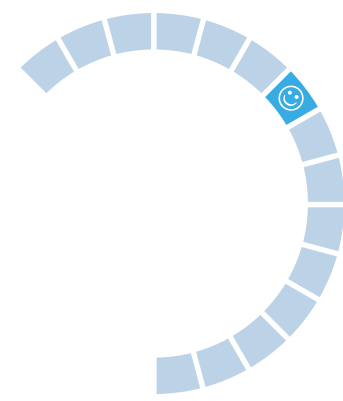
Embodied learning is an educational method that has been around for a while in (primary) education. In this method, one combines an intellectual way of teaching with moving the whole body. (Waag Society, 2012)

## MORE MOVEMENT IN THE CLASSROOM:

### The context for creating iMO-LEARN

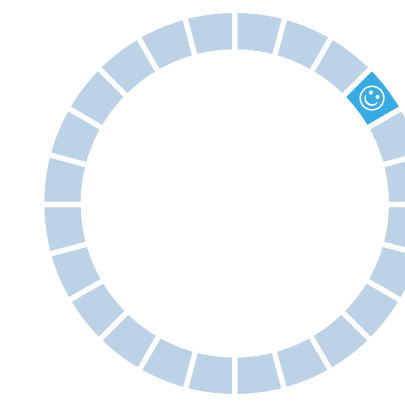
In collaboration with the Southern Denmark University, i3-Technologies searched for a solution to implement physical activity in classroom practices. They started with a circular bench that naturally engages students to move. The circle was then divided into 24 separate units that can be integrated in any classroom setting without replacing the furniture. They named it iMO-LEARN, a smart piece of furniture that gives students the opportunity to be physically active while learning.

The iMO-LEARN has no straight edges. Therefore you can work with every side. Its unique and lightweight shape promotes dynamic sitting and makes it easy to change the class organization. Four configurations have been predefined: circle, semi-circle, dialog circle and duo chair.



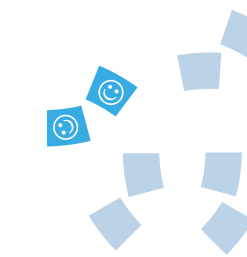
### The Semi-Circle

The group faces the same point, for example a screen or a person. The available space in the middle can be used for activities.



### The Dialog Circle

When you place half of the iMO-LEARNs in the inner circle and the other half in the outer circle, you create two groups in which students discuss topics in pairs.



### The Circle

When sitting in a circle, teacher and students become equal partners in the conversation. Everyone can see each other. This setup is perfectly suitable for group conversations.

### The Duo Chair

There are different ways to combine two iMO-LEARNs. Students sit down facing each other, next to each other, turned in opposite directions or back to back.

## Benefits of learning with iMO-LEARN

- Learn by moving
- Add gamification to your lessons
- Get students easily engaged
- Keep students motivated during class
- Make complex learning subjects easier to understand



## USE CASES

### Stimulating comprehension in Special Needs Schools

i3-Technologies has been testing the usability of the iMO-LEARN project in practice. For the past year, the company has been researching its added value in a number of schools and educational institutions.

#### De Bremberg

One of those schools is De Bremberg, a school in Diest, Belgium, for preschool, elementary school children and adolescents with a moderate to severe mental disability. The research provided a lot of information in the field of learning with a mental disability and it generated valuable feedback.

Teachers at De Bremberg said iMO-LEARN brings the different subjects into practice, making it easier for children to pick up the subject matter. It's a fact that children learn better and more efficiently when they are personally involved in the lessons. This is even more true for children with mental disabilities. Working with iMO-LEARN allows them to learn to work together to achieve a common goal, such as a solution to a math question or a building construction.





## Burnt Ash

Burnt Ash Primary School is located in the heart of London. Like many schools in the city, students come from different backgrounds reflecting the vibrancy of the capital. The school also has children from disadvantaged backgrounds, whose first language is not English and children with Special Education Needs (SEND).

The school was looking for flexible technologies to promote engagement and independence in early years. Burnt Ash found the solutions offered by i3-Technologies differed from other suppliers. They are more imaginative, engaging and above all flexible. When the school introduced the iMO-LEARN the students were engaged from the very beginning.



They even skipped their break to continue playing with iMO-LEARN. A clear sign for the teachers that using iMO-LEARN in class has a positive impact on their engagement.



## Driving student engagement in Primary schools

### Schillerschule

Schillerschule Unna is a primary school in Germany that follows a special pedagogical concept including individual learning and movement. This means that students have weekly personal learning targets in different subjects for which they can use individual methods and tools. The school always tries to be as innovative as possible and follows the latest trends to support its concept. In 2018, the school bought a set of iMO-LEARNS to promote active learning through analogue and digital activities. The teachers are convinced that iMO-LEARN is a useful tool for their students to reach their personal learning targets.



### Omnimundo

Kindergarten and primary school Omnimundo in Antwerp has proven that active learning is very beneficial for non-native students with disadvantaged backgrounds. i3LEARN-HUB and iMO-LEARN give them the right tools to learn at their own pace.

Olivier, a primary teacher, notices his students are engaged from the first moment. Experimenting with iMO-LEARN triggers their learning passion and motivates them to collaborate and to take initiative to learn more. They don't fiddle with the technology. They are very focused and engaged in classroom activities and make purposeful use of the mate-

rials to participate in the lessons. They adopt the technology very easily and feel confident that it enables them to practice the subject matter more and better.

*"iMO-LEARN is a great starting point for children to interact and work with each other, and they don't have to sit still to learn. It helps them learn, move and have fun while learning!"*

- Teacher,  
Schillerschule



### SCIENTIFIC STUDY SHOWS POSITIVE EFFECT ON CLASSROOM EXPERIENCE

Denmark is a forerunner in innovation in education. This made Denmark a good choice for i3-Technologies to work on the ambitious iMO-LEARN project to integrate more physical activity in the classroom. A few years after the creation of iMO-LEARN in 2012, the time was right for a scientific evaluation: what value does iMO-LEARN add in the classroom for teachers and children?

*"Small activities in relation to everyday life make a significant difference where the students almost think of learning as a state of play, and maybe even learn without realizing it."*

*- Johanne,  
Student*

Research shows that it is difficult to change teaching-learning activities and the class environment. Barriers to the integration and adoption of educational technologies can be found at a school level (funding) and teacher level (learning to use new tools). This means that innovation in education technology is ambitious and requires a high level of user-friendliness.

A Danish Study in 2017 aimed at investigating the effects of using iMO-LEARN in relation to student's engagement in 3 Danish schools. The findings show that iMO-LEARN has a

positive effect on overall classroom experience: iMO-LEARN is a natural mediator of play and enables student's involvement in learning activities.

*"It's more fun to use iMO-LEARN than regular instruction. I think I like to learn more than before. You can also learn in a different way, and make fun games, where you learn in a different way."*

*- Helene,  
Student*

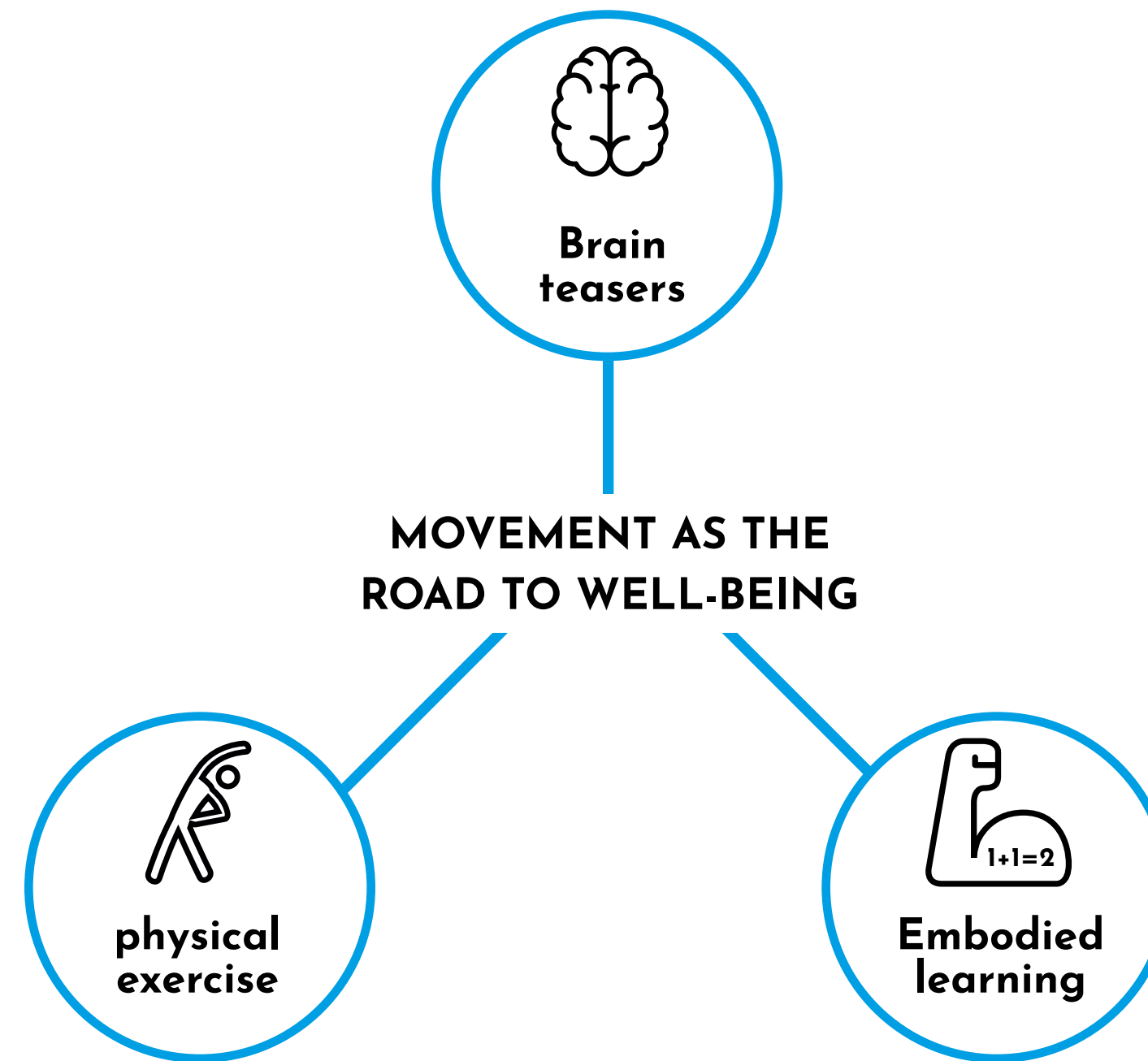


## TIPS FOR IMPLEMENTING IMO-LEARN IN THE CLASSROOM

### Analog use

The iMO-LEARN offers many options to enrich your lessons and engage your students. An intense co-creation process involving 100 pupils and 8 teachers showed that iMO-LEARN can be used for diverse movement activities such as physical exercises, brain teasers, embodied learning as well as various subject domains including mathematics, languages and balancing exercises. In addition i3-Technologies developed an activity manual with 100 basic exercises for teachers to use as a start.

There is also a set of 40 building activities to help students practice teamwork and spatial orientation. The set includes building constructions that students need to recreate while paying attention to the number of iMO-LEARNs and their position in order to build an identical construction.



### Digital use

iMO-LEARN can also be used for digital activities in combination with a motion detection module. Connect iMO-LEARN to the online learning platform i3LEARNHUB with a wireless motion detection sensor. It instantly transforms the iMO-LEARN into an interactive and digital educational resource that gives immediate feedback. This way teachers can easily engage students with challenging quizzes and fun activities.



## Products featured in this whitepaper



### **iMO-LEARN**

A cube for active learning designed to promote active movement in the classroom, and give students opportunities to learn by moving.

[Read more about this product →](#)



### **i3LEARNHUB**

An open cloud-based learning platform for teachers to prepare lessons, collaborate with students and share files.

[Read more about this product →](#)



## CONCLUSION

This whitepaper sought to examine the current state of physical activity in classrooms and to introduce iMO-LEARN as an innovative education tool to integrate more movement in lessons.

Key to any modern learning space is the ability to actively involve all students. The Danish Study shows that the use of iMO-LEARN in daily lesson activities shows positive effects on student engagement.

New education technology needs to be user-friendly to blend into daily lesson activities in a smooth way. A key factor for successful introduction of new education tools are ease of use for both teachers and children. The focus stays on teaching the subject, not on the tools. The technology serves as a natural mediator and a catalyst to spark learning passion.

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**i3-TECHNOLOGIES**



University of Southern Denmark

## About i3-Technologies

i3-Technologies is part of the i3-Group of companies, a privately held, family-owned company founded in 1968 and headquartered in Belgium. The company is one of the world's leading manufacturers of interactive technologies for group collaboration.

The i3-Technologies portfolio of products is available in more than 80 countries and has received numerous awards and recognitions—most recently being selected as a Top 25 Collaboration Technology Company by CIO Applications for 2018. The products of i3-Technologies are offered through a network of accredited, value-added resellers to ensure best-in-class service and support. For more information visit [www-i3-technologies.com](http://www-i3-technologies.com).

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