

### **Overview**

The technical and technological developments of the last 20 years have made the use of **digital devices** and internet-based **software solutions** come into **prominence in education**. Nowadays it is indispensable for the participants (students, workers, etc.) of the synchronous distance learning programs that the courses should be recorded and available online after the classes.

## The Importance of Recording

One of the major benefits of recording - and essential in case of distance learning - is the possibility of **replay**. The reproducibility of the delivered curriculum provides an opportunity for students to fulfill their out-of-school responsibilities without these activities being at an expense of their educational progress. Reviewing recorded courses can greatly contribute in preparation for exams, understanding complex subjects and at-home learning in general.

The centralized recording of synchronous distance learning also provides an opportunity for **quality evaluation of online lectures**. Institutions can grade virtual lessons in terms of content, pedagogy, methodology and technology. Such quantitative and qualitative indicators could be: the proportion of the planned and actually taught lessons, time management, the evaluation of teaching methods, student activity, etc.

The rate of **student participation can be also monitored** via the institutional level of recording distance learning. Due to metadata the system also serves as an "**automatic catalog**", which relieves the instructor of administrative tasks.

The centralized recording of online courses also ensures the **transparency** of the operation of the institution. Especially in public education, it is an emerging demand from the parental side to **gain insight into school processes**. The scenario of distance learning provides an opportunity for the performance and behaviour of the child - and the teacher - to be **transparently traceable**. Another great additional benefit of recordings is the possibility of transcribing. **Transcriptions** enable users to **search** for specific information quickly, and generate **lecture notes via exporting** the transcribed submitted curriculum.

The rudimentary recording functions of **commonly popular video conferencing systems** (Microsoft Teams, Google Meet, Cisco WebEx, Zoom) are **not able to** completely **fulfill** the aforementioned needs due to the following:

- Recording can be scheduled to an extent, therefore record generation usually depends on the lecturer.
- Recorded media files can only be managed manually.
- Post-processing options of recorded materials (e.g. transcribing) are limited.
- Centralized sharing of recorded lectures is not fully possible due to the absence of built-in sharing platforms.

These systems can only record their video conferences. In case an institution uses several systems, the difference of the recorded file formats can cause unnecessary difficulties.

All the above **reduces workflow efficiency**, furthermore the lack of a **separate sharing server** toughens the publication and the update of recorded interactions.



**CARIN LectureCorder** is a centralized and vendor-independent media recorder, transcriber and sharing application that **fully meets the aforementioned demands of synchronous distance learning**. It provides a complete and sophisticated solution from beginning to end, including organizing, execution and post-processment.

# Software Components of CARIN LectureCorder:

## **Organizer Module**

The Organizer module contributes to the delegated organizer's (which can be an external IT company or a designated employee of the educational institution) **efficiency** by facilitating the process **of associating the audience with the lecturer** and the tools and resources needed for online presentation. The automated organizing platform of Outlook integrated with the CARIN system can optimize efficiency and the overall workflow.

### **Recording Module**

A recorder is an IT solution that can connect to various video conferencing solutions commonly used in higher education, such as Microsoft Teams, Zoom or Cisco WebEx, by recording the interaction between the presenter and the participants while also recording the additional media shared during the online lecture, for example background projections, PowerPoint presentations or even handwritten texts and any kind of image or document.

## **Sharing Module**

The sharing function provides **secure access** to recorded materials that the audience is entitled to **review** or **download and export** via a controlled and interactive environment. Shared recordings are edited materials, which contain searchable and interactive inserts and are also suitable for later on offline group learning sessions.

**CARIN Publishing Server** provides a secure and **traceable way to share** recorded interactions among various members of your organization via a simplified easy-to-use web interface.

## **Processing Module**

During the processing of recorded media, it is necessary - and possible due to CARIN's multi-transcoding feature- to **compile** the received **media channels** in a way that is the most **optimal** for the audience while subsequent offline listening. Research results have shown that audience engagement is much more intense if they not only see static content but also have the opportunity to participate interactively in the lectures. With **post-process features** such as emotion detection and transcription generation, the utilization of data - just as in case of call centers - can greatly contribute to **future developments** and **workforce optimization**.



E-mail:









#### Headquarters

info@tcandc.com

Address: Wesselényi u. 35.
Budapest
H-1155, Hungary
Phone: +36 1 414 2090
Fax: +36 1 414 2091

#### Americas

677 N Washington Blvd Suite #57 Sarasota FL 34 236, USA +1 832 616 8203

info-usa@tcandc.com

#### UK & Ireland

280 Bath Road West Drayton UB7 0DQ, UK +44 020 8754 1508 +44 020 8754 0862 info-uk@tcandc.com

#### Australia

5 Eungella Terace Forest Lake Queensland, 4078 +61 738 792075

info-aus@tcandc.com

#### www.tcandc.com

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