

# A Web-Based Interface for Score Following and Track Switching in Choral Music

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## Abstract

Music can be represented in many different ways. In particular, audio and sheet music renditions are of high importance in Western classical music. For choral music, a sheet music representation typically consists of several parts (for the individual singing voice sections) and possibly an accompaniment. Within a choir rehearsal scenario, there are various tasks that can be supported by techniques developed in music information retrieval (MIR). For example, it may be helpful for a singer if both, audio and sheet music modalities, are present synchronously—a well-known task that is known as score following. Furthermore, listening to individual parts of choral music can be very instructive for practicing. The listening experience can be enhanced by switching between the audio tracks of a suitable multi-track recording. In this contribution, we introduce a web-based interface that integrates score-following and track-switching functionalities, build upon already existing web technology.

## Web-Based Interface

<https://www.audiolabs-erlangen.de/resources/MIR/2018-ISMIR-LBD-Carus>

### Functionality

- Score following combining audio and sheet music
- Track switching between musical voices
- Additional voice-based highlighting in score



### Technical Realization

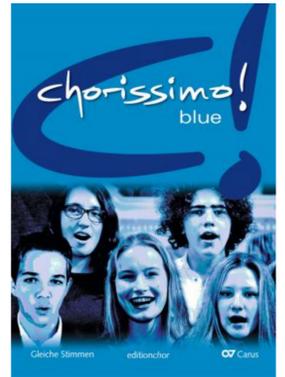
- Standard web-based techniques
- Trackswitch.js [3] for switching between the multitrack recordings
- Verovio [2] to dynamically render sheet music (given as MEI)

## Data Set

ID	Title	Parts	Dur.
044	Abends, will ich schlafen gehn	SA	02:45
056	Der Ring	SS	01:15
079	Schwesterlein, wann gehen wir nach Haus	SAA	02:52
081	Un poquito cantas	SSA	01:29
105	Greensleeves	SSA	04:18



- Subset of *Chorissimo! Blue* [8]
- Aimed at teaching music at the secondary school level
- 5 stylistically diverse songs with two to three parts
- Available: Sheet music, reference recordings and multitrack recordings



## Practical Relevance?

- For a music publisher, visual appearance of sheet music is of top priority
- Professional sheet music engraving is an art
- Tweaking within music notation software to optimize visual appearance (e.g. creation of dummy objects)
- Problem of conversion between data formats (Sibelius, MEI, MusicXML)
- Specific requirements for technical reasons (e.g. separation of voices in sheet music)
- Automated rendering procedures do not suffice publisher's needs

## Literature & Acknowledgements

[1] Dasaem Jeong, Taegyun Kwon, Chaelin Park, and Juhan Nam. PerformScore: Toward performance visualization with the score on the web browser. In Demos and Late Breaking News of the Int. Society for Music Information Retrieval Conf. (ISMIR), Suzhou, China, 2017.

[2] Laurent Pugin, Rodolfo Zitellini, and Perry Roland. Verovio: A library for engraving MEI music notation into SVG. In Proc. of the Int. Society for Music Information Retrieval Conf. (ISMIR), pages 107–112, Taipei, Taiwan, 2014.

[3] Nils Werner, Stefan Balke, Fabian-Robert Stöter, Meinard Müller, and Bernd Edler. trackswitch.js: A versatile web-based audio player for presenting scientific results. In Proc. of the Web Audio Conf. (WAC), London, UK, 2017.

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