

Markup Languages for Music

MUSICXML AND MEI



Markup languages in general

SGML: Standardized General Markup Language (US Gov't Printing Office, 1972)

HTML: HyperText Markup Language (1980; 1995)

XML: Extensible Markup Language (1998)

Music-specific:

- CMME: Computerized Mensural Music Editing
- MusicXML
- MEI: Music Encoding Initiative

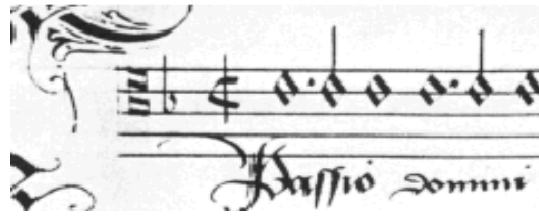
CMME: virtual editions of early music

Corpus Mensurabilis Musicarum (zest. 1998)

Est. and built by Theodor Dumitrescu, Oxford-Utrecht-Berkeley



Goal: *One encoding, multiple systems of notation for mensural notation*



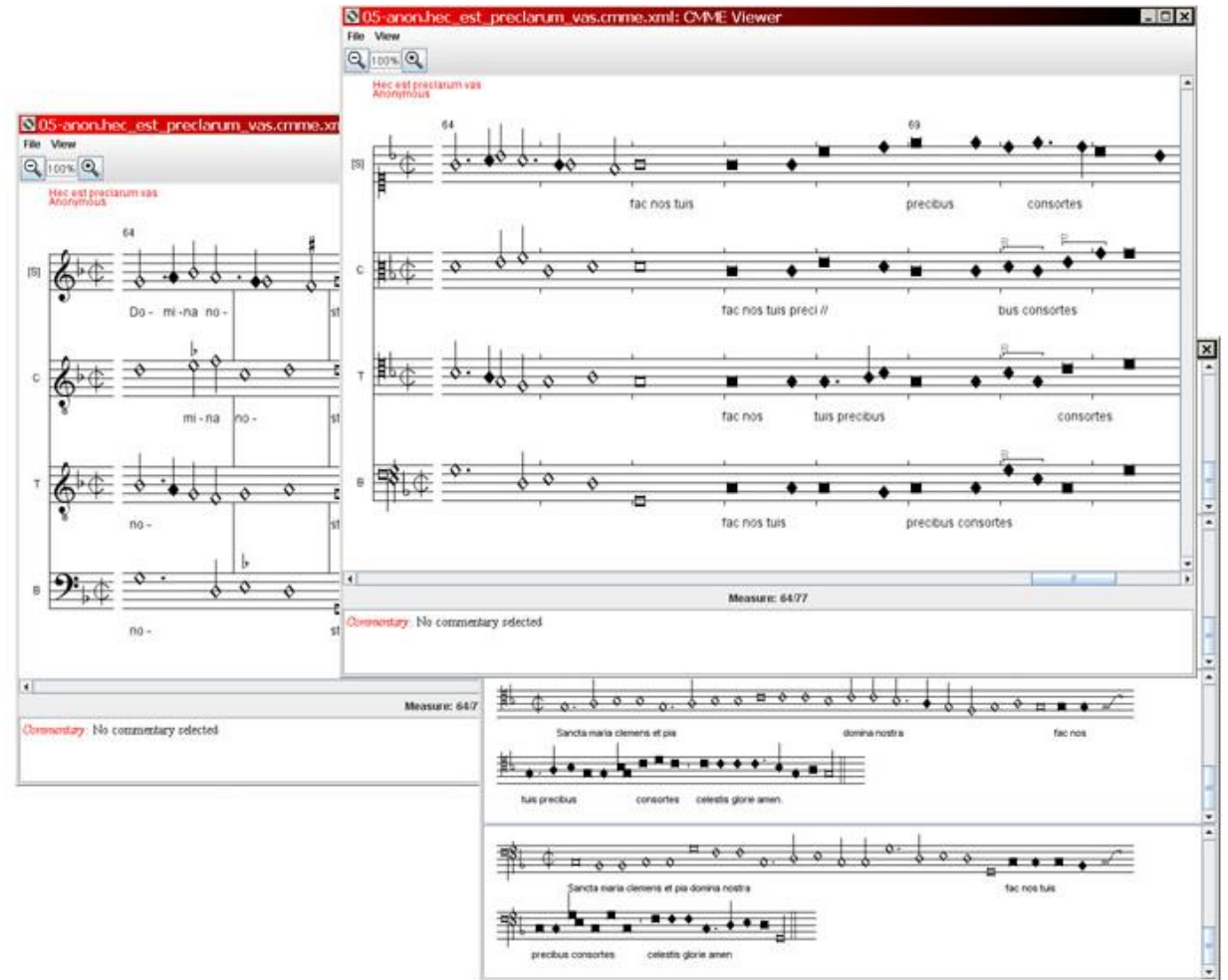
cmme.org

From *The Virtual Score*. Used by permission.

CMME c. 2010

- Content lists,
- Some scores, for 15th-16th cent music
- Java-based
- Core of an electronic publication system
- Peer-reviewed

<http://www.cmme.org>



CMME: Special projects

File View Versions

PLAY Version: Dumitrescu 100%

Missa Benedictus dominus: Kyrie
Jean Mouton

46 51

Son xpriste ste

xpriste Cri - ste e - ley -

son Cri - ste e - ley - son e - ley - son Cri -

ste Cri - ste e - ley - son e - ley - son Cri -

Measure: 46/98

Commentary: No commentary selected

Variant display options

Display version

☒ Dumitrescu ☐ Occo Codex ☐ CambraIM 4 ☐ MundIS 510

☐ Petrucci 1515 ☐ Bourdeney MS ☐ ReggioSP s.s. ☐ ToleF 23

Mark on score

☐ All variants ☐ No variants ☒ Selected variant types:

☐ Non-substantive ☒ Rhythm ☒ Pitch ☐ Text ☐ Accidental

☐ Clef ☐ Line-break ☒ Coloration ☒ Ligature ☒ Mensuration

Easily visualize variant readings, both on the score and in a configurable critical apparatus window

8v-1.cmme.xml: CMME Viewer

File View

100%

[Proportional example]
John Dygon

D T

Measure: 1/10

Commentary: No commentary selected

Support for notational features such as arbitrary proportions and colors

MusicXML: Main Aims

Nexus of all **commercial** notation interchange schemes

Highest structural compatibility with MuseData and Humdrum

Most useful tool for converting from older to newer versions of *Finale*!

In use for over past decade by many small sw companies and a few music publishers (inc. Hal Leonard)

Part/score versatility in *MusicXML*

Both/and

1. Encode **voice by voice** or **bar by bar**
2. **Transform array** as needed

Part-wise (MuseData)

Time-wise (Humdrum)

The image displays two musical score snippets. The top snippet shows a single system with four staves: 'clarinet in A', 'violin I', 'violin II', and 'viola'. The bottom snippet shows a single system with five staves: a vocal line (labeled 'S') and three piano accompaniment staves (labeled 'p' and 'pi'). In both snippets, a vertical yellow bar highlights a specific measure across all staves, demonstrating the 'bar by bar' encoding. The staves are grouped by purple brackets, and the highlighted measure is also enclosed in a yellow box.

MusicXML: History

<https://www.musicxml.com/>

Developed from 2000 by Michael Good; 20th anniversary--2020

Distrib Recordare (2002-2011)

- V. 1: platform-specific (2004)
- V. 2: Java (2007)
- V. 3: Java (2011)
- Sold as add-on to *Finale*, *Sibelius* et al.

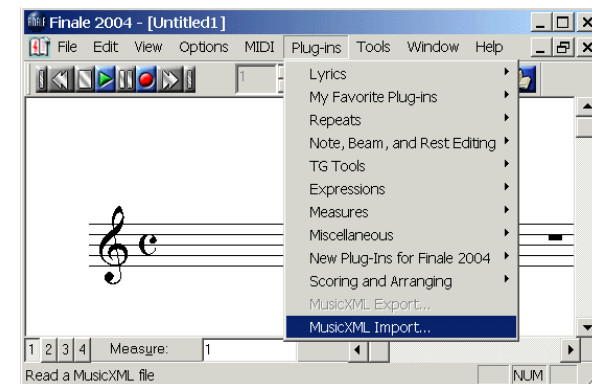


NAMM 2011

Sold to MakeMusic (*Finale*) in 2011

- Native in *Finale*; more limited capabilities in *Sibelius*
- <http://www.makemusic.com/musicxml/>

Sibelius team moved to Steinberg as *Keeping Score* > *Dorico*



MusicXML Progeny

Finale

Sibelius

- Sibelius
- Dorico 3.0.1
- Dorico SE

SMUFL

NoteFlight

MuseScore

Dorico: response to Lead-sheet request

Concert Score

for Men & Padsline

Dorico Prelude

Segun Akibode

1 2 3 4 5

Flute 1-2
Clarinet in Bb 1-2
Bassoon 1-2
Horn in F 1,2,3,4
Trumpet in Bb
Trombone 1-2
Bass Trombone
Tuba
Timpans (2 each)
Glockenspiel (2 each)
Cymbals (2 each)
Drum
Mg (2 each)
Vibron 1 (12)
Vibron 2 (12)
Vibron 3
Vibron 4
Vibron 5 (12)
Vibron 6 (12)
Contrabass (12)

1 2 3 4 5

2

3 4 5 6 7

H. 1-2
Cl.
Cl. in Bb 1-2
Bsn. 1-2
Horn F 1,2,3,4
Tpt. in Bb
Bsn. 1-2
B. Tbn.
Tbn.
Timp.
Glock.
Cym.
Drum
Mg.
Vib. 1
Vib. 2
Vib. 3
Vib. 4
Vib. 5
Vib. 6
Cl.

MEI: the Music-Encoding Initiative (4.0)

<https://music-encoding.org/>

To support encoding of musical **sources**

- i.e. sources underpinning modern editions

To function **synchronously** with TEI (Text Encoding Initiative)

- Sources in which textual material and music are combined

To rely on **3rd-party software** for printing and data interchange

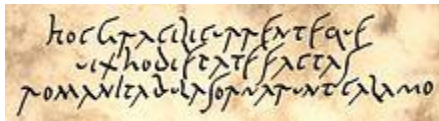
<https://music-encoding.org/guidelines/v4/content/> (current guidelines)

<https://music-encoding.org/community/interest-groups.html> (interest groups)

Modeled on the TEI

(used broadly in relation to sources)

Old Roman cursive script



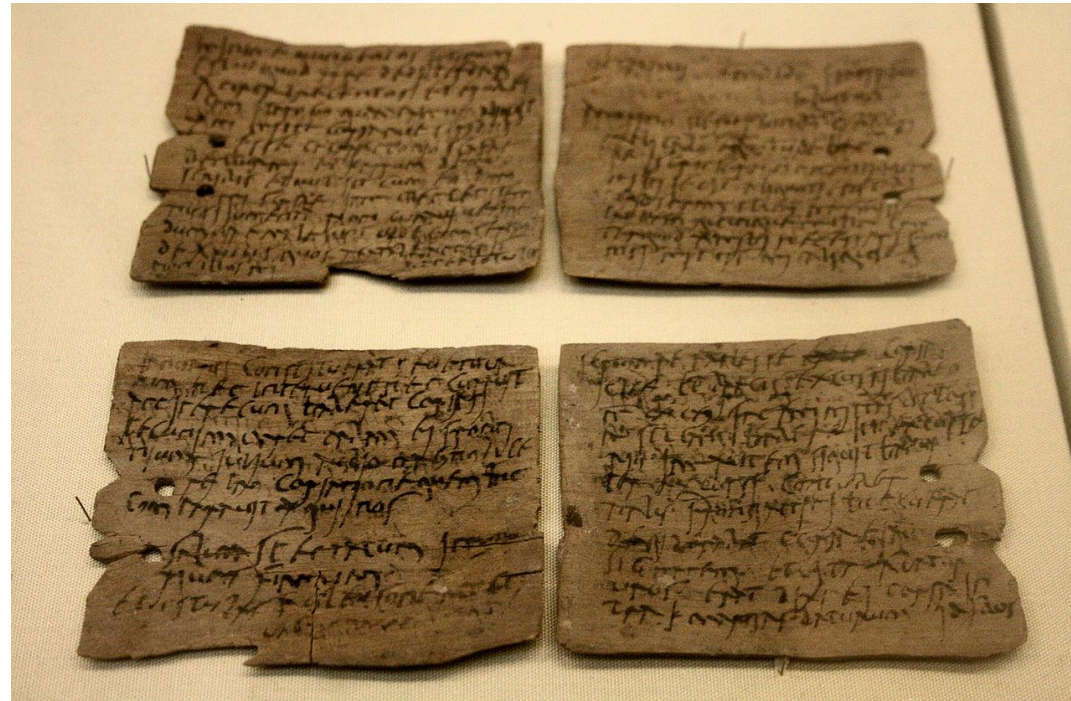
TEI app EpiDoc

-epigraphy (Oxford)

Other TEI tools

-Coins

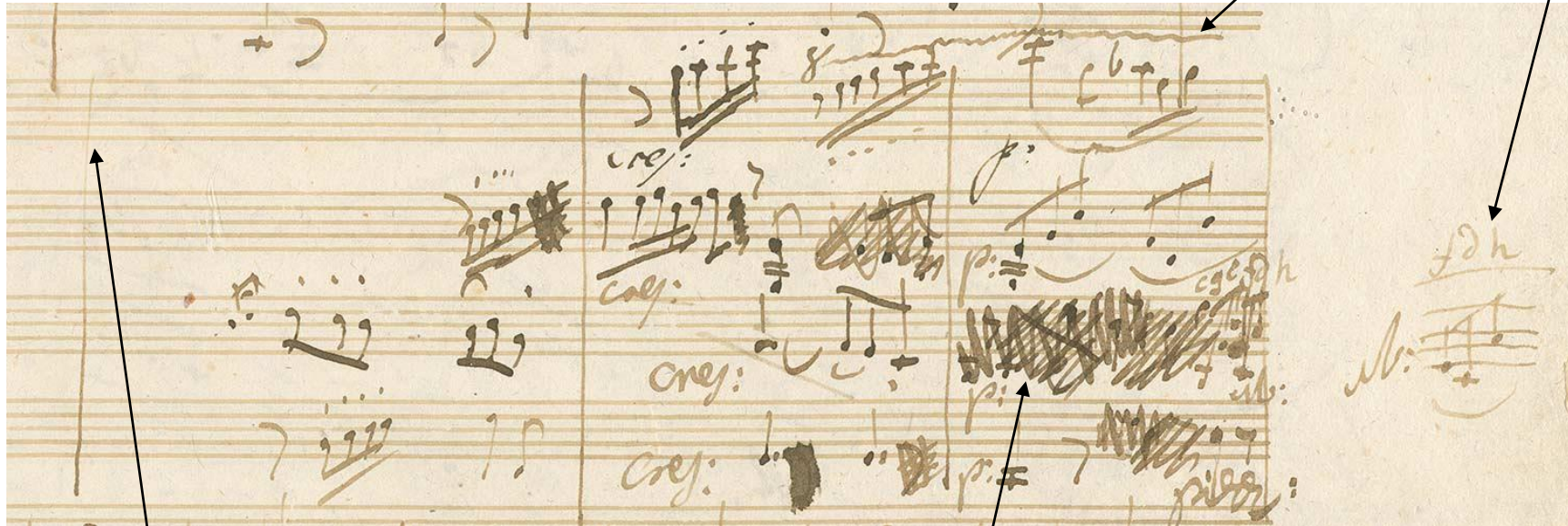
-Seals



Form of virtual preservation

Tablets from Roman fort at Hadrian's Wall

Source problems in music manuscripts



Suppressed material

Added material

Imperfections

Ambiguities

Vivaldi MS

Source problems in printed music



Initial for first word? [archaic vs. modern notation]

Bar lines?

Custos?

Part-book problems?

Zefiro: West wind)

Monteverdi