A Case Study of Legacy Source Code

The Computer Music System TAU2-TAUmus
TAUmus: why is it so interesting?
TAUmus: why is it so interesting?

- Developed in Pisa: fits well the SWHAP@Pisa project
TAUmus: why is it so interesting?

- Developed in Pisa: fits well the SWHAP@Pisa project
- Dedicated (and still existing) hardware
TAUmus: why is it so interesting?

- Developed in Pisa: fits well the SWHAP@Pisa project
- Dedicated (and still existing) hardware
- A pioneeristic work
TAUmus: why is it so interesting?

- Developed in Pisa: fits well the SWHAP@Pisa project
- Dedicated (and still existing) hardware
- A pioneeristic work
- Tons of related material (thanks to Leonello Tarabella)
An overview of Grossi's work

- Born in 1917 in Venice
- 1965: professor for the first electronic music course in Italy
- 1967: starts exploring computer music (first Olivetti, then CNUCE)
- 1970: first experiment on musical telematics
- 1975: deployment of TAU2/TAUmus system
- 1985: introduces the concept of Home Art
An overview of Grossi's work

- Born in 1917 in Venice
- 1965: professor for the first electronic music course in Italy
- 1967: starts exploring computer music (first Olivetti, then CNUCE)
- 1970: first experiment on musical telematics
- 1975: deployment of TAU2/TAUmus system
- 1985: introduces the concept of Home Art
- More info: https://www.pietrogrossi.org
Home art nowadays
Tarabella's fonds of TAUmus

- Three main categories:
• Three main categories:
  • Papers and sketches

Tarabella's fonds of TAUmus
Tarabella's fonds of TAUmus

- Three main categories:
  - Papers and sketches
  - Source code
Tarabella's fonds of TAUmus

- Three main categories:
  - Papers and sketches
  - Source code
  - Project specifications
Different kinds of Source Code
Different kinds of Source Code

- FORTRAN listings:
  - TAU2 was just an audio terminal: it didn't run code
  - Code ran on the CNUCE's IBM 370
  - These are (part of) the code of the TAUmus interpreter
Different kinds of Source Code

- FORTRAN listings:
  - TAU2 was just an audio terminal: it didn't run code
  - Code ran on the CNUCE's IBM 370
  - These are (part of) the code of the TAUmus interpreter

- TAUmus listings:
  - Hand-written, the actual code of music sessions
  - The interpreter was basically a terminal
  - The user could play music using the TAUmus commands
The process, instantiated

- TAUmus Workbench is the (virtual) place where the work actually started
• TAUmus Workbench is the (virtual) place where the work actually started
• The directory structure is inherited from the SWHAP template
The process, instantiated

- TAUmus Workbench is the (virtual) place where the work actually started
- The directory structure is inherited from the SWHAP template
- From here, we performed the process's steps
The process, instantiated

- First we created the Depository
The process, instantiated

- First we created the Depository
- Here we have raw-material...
The process, instantiated

• First we created the Depository
• Here we have raw-material...
• ...and browsable-source
The process, instantiated

- First we created the Depository
  - Here we have raw-material...
  - ...and browsable-source
- Then we (re)created the development history
The process, instantiated

• First we created the Depository
  • Here we have raw-material...
  • ...and browsable-source

• Then we (re)created the development history
  • The SourceCode branch contains the versioned code
The process, instantiated

• First we created the Depository
  • Here we have raw-material...
  • ...and browsable-source

• Then we (re)created the development history
  • The SourceCode branch contains the versioned code
  • The development history can be seen by checking for releases
TAUmus lives back!

Thanks to Massimo Magrini, Signal and Image Laboratory, CNR
TAUmus lives back!

*Thanks to Massimo Magrini, Signal and Image Laboratory, CNR*
What we achieved

• An important piece of source code has been recovered
• A working sample of the music produced using TAUmus software is now available for everybody
• TAUmus authors and contributors work is recognized and preserved on GitHub and the Software Heritage archive
• Present phase of the process has been partially implemented
• TAUmus provides an important starting point for further discussions
  • What about "holes"?
  • Does it make sense to deploy a full functioning TAUmus clone on a modern computer?
  • Isn't source code like music, in the end?
Thank you!