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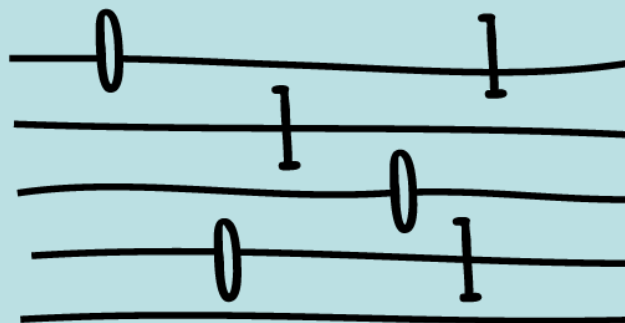
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RICERCA EDUCATIVA

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ISTITUTO PER LO SVILUPPO DELLA
FORMAZIONE PROFESSIONALE
DEL LAVORATORE



SWING PROJECT



Consortium
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Ministero dell'Istruzione,
dell'Università e della Ricerca



Ministero del Lavoro
e delle Politiche Sociali



Presidenza del Consiglio dei Ministri
DIPARTIMENTO DELLA GIOVENTÙ E DEL SERVIZIO CIVILE NAZIONALE

SWING

<http://www.swing-project.eu>

Synergic Work Incoming New Goals for Higher Education Music Institutions

Project Duration: from September 1° 2018 until August 31° 2021

Partners

- **GARR** Consortium GARR - Italy
 - (Project Coordinator and network technology support)
- **CONTS** Conservatorio di Musica G. Tartini Trieste – Italy
 - (Technology development and teaching and training testbed)
- **MDW** Universitaet fuer Musik und Dartellende Kunst Wien – Austria
 - (Technology development and teaching and training testbed)
- **AG LJ** Akademia za Glasbo Univerza v Ljulijani - Slovenia
 - ((Technology development and teaching and training testbed)
- **AEC** Association Europeenne des Conservatoires, Academies de Musique et Musikhochschulene – Belgium
 - (Training and Disseminatio)

SWING

<http://www.swing-project.eu>

Synergic Work Incoming New Goals for Higher Education
Music Institutions

Other Associated Partners

- **INTERMUSIC Project – Conservatorio G. Verdi Milan – Italy**
- **Politecnico di Milano – Italy**
- **The Royal Danish Academy of Music Copenhagen – Denmark**
- **ARNES The Slovenian Research and Education Network - Slovenia**

SWING is a project to blend

**Performing Art Teaching
and
Technology!**



The Project Official Goals

- to create a new professional profile: the **technology friendly master level music teacher**
- creation of a set of **new learning prototype modules** which use a **mix of local and remote education**
- development of a **deeper transnational collaboration**, which should compare, harmonize, fine tune e deploy joint activities resulting in a **higher quality joint curricula**.
- **enhanced quality of the international mobility** model for students and teachers, **supplementing the physical mobility with a continuous virtual one**
- **enhancement of distance learning technology** platform (LoLa), uniquely **tailored to teachers and students needs**
- a more **homogeneous PhD level Higher Education** path among different education institutions in different countries

The Project Structure

- **01: Distance learning modules, Year 01: Solo instruments.**
- **02: Distance learning modules, Year 02: Chamber Music, small ensemble**
- **03: Distance learning modules, Year 03: Music for Instrumental Ensemble.**

O1, O2 and O3 have all two main goals:

- to define, to test and adjust the pedagogical contents in view of a possible future joint curricula among institutions
 - to be a testbed for LoLa and tools development, setting specific requirements for new implementations
-
- **04: LoLa and technical tools development**
 - The new LoLa implementation will provide users with a set of tools and extensions specifically tailored for music education

The background of the idea

For some time now, performing art teachings and production have been considered distant from technology and advanced networking services. This has been proven incorrect since the beginning of the 21st century, when we first started to explore how the two worlds could benefit one from the other, via a series of meetings and workshops ([Network Performing Arts Production Workshops](#)) and, later, the development of specific, advanced tools like LoLa ([Low Latency advanced streaming system](#)). Now, teachers and artists in the area have new unprecedented possibilities to interact, teach and also create new forms of art, using these advanced tools. Project like SWING aim to make the teachers and students more "digitally aware" in the performing arts and also helps them to introduce technology into their daily life.



NPAPWS 2020

Renasseller Polytechnic

Troy, NY, USA

April 21-23



The Curtis R. Priem Experimental Media and Performing Arts Center

The Technical Background: LoLa

**“To perform together, from
distant locations...
as if distance has vanished
in a click of a computer mouse”**



...a viola Masterclass with New World Symphony – Miami USA,
at the GARR Conference 2005, in Pisa...

What is the LoLa system?

Software

```
fcomplex RCmul(float x, fcomplex a)
{
    fcomplex c;
    float w;
    if ((z.r == 0.0) && (z.i == 0.0)) {
        c.r=0.0;
        c.i=0.0;
        return c;
    } else {
        w = sqrt((sqrt(z.r*z.r + z.i*z.i) + 1.0) / 2.0);
        if (z.r >= 0.0) {
            c.r=w;
            c.i=z.i/(2.0*w);
        } else {
            c.r=0.0;
            c.i=0.0;
        }
    }
}

fcomplex Csqrt(fcomplex z)
{
    fcomplex c;
    float w;
    if ((z.r == 0.0) && (z.i == 0.0)) {
        c.r=0.0;
        c.i=0.0;
        return c;
    } else {
        w = sqrt((sqrt(z.r*z.r + z.i*z.i) + 1.0) / 2.0);
        if (z.r >= 0.0) {
            c.r=w;
            c.i=z.i/(2.0*w);
        } else {
            c.r=0.0;
            c.i=0.0;
        }
    }
}

fcomplex Cinv(fcomplex z)
{
    fcomplex c;
    float w;
    if ((z.r == 0.0) && (z.i == 0.0)) {
        c.r=0.0;
        c.i=0.0;
        return c;
    } else {
        w = sqrt((sqrt(z.r*z.r + z.i*z.i) + 1.0) / 2.0);
        if (z.r >= 0.0) {
            c.r=w;
            c.i=z.i/(2.0*w);
        } else {
            c.r=0.0;
            c.i=0.0;
        }
    }
}
```

<http://lola.conts.it>

Hardware



Network



Where SWING starts from?

We know quite a lot on how to make a concert or a masterclass now...

- What happens if we jump with technology in the middle of ordinary music courses?
- How the teaching is changed by technology?
- How technology needs to be changed for good teaching?



How are we “SWINGing”?

- A lot of real teaching sessions with many different instruments and situations, embedding LoLa into usual life of teachers and students
- **Collect feedback, discuss it, and try to turn it into new technology features.**
- **Then try it again, and see how it works!**



An Overview of Year 1

- 10 teachers involved
- 40 active students
- 50 other students following the lessons
- Accordion, Singing, Piano, Guitar, Saxophone courses
- About 40 teaching sessions from February to May 2019
- Continuous feedback with technical development
- Many discussions and disseminations activities
- A long TODO list with ideas and new tests

Lesson learned:

- It is very complex to jump in the middle of “ordinary teaching”
- ... but it works!
- It brings new ideas both in teachers and in students.

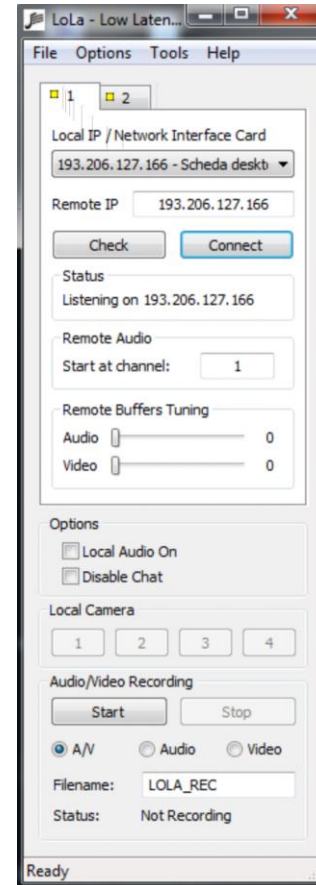
After 1 year of swinging...

- We want to see from different viewpoints!
- A better support for voice while talking
- We want to see and annotate scores in the screen
- Eye contact also with teacher, not only with other musicians
- Bigger, or more video screens
- Sound dynamics must improve for some instruments
- Better guidance on microphone positioning
- Singers and different, they want more ambience sound!
- Singers need to act, to move, and support for this is still too little
- How I would like also to touch YOUR instrument some times!
- I have new methods: make a camera close-up!
- Look at me from different viewpoint!
- ...

First technical result

LoLa v2.0.0 beta

- A renewed main interface
- Support for three hosts connection
- Support for Multicamera switch (up to 4 cameras)
- ...



Let's listen to those who SWINGed for academic year 2018 – 2019 !

But also (press CC for subtitles):

<https://video.arnes.si/portal/asset.zul?id=Z1UUhSURGUUbbYUdiKjSYs1R>

CONTACTS

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More information also on

<https://lola.conts.it>

<http://www.garr.it>