



**NCDP at NPAPW19
Prague 2-4 April 2019**

NPAPW19 Prague, 2-4 April 2019

*What is happening in
the remote north?*

*NCDP Project manager
Mårten Fröjdö*

*TAMPERE Uni, Studio Manager
Matias Palo*

*Riksteatern, Producer
Ann-Cathrine Fröjdö-Brandt*

Nordic Center for Digital Presence NCDP

RIKSTEATERN



Riksteatern is the national touring theatre of Sweden.

RIKSTEATERN – an idea based cultural organisation with over 40 000 dedicated members that work together to make dance and performing arts available to all people, all over Sweden. Riksteatern arranges, promotes and delivers ca 70 productions/year to over 1 000 000 audience members.

Present at NPAPW19

Ann-Cathrine Fröjdö-Brandt, Producer, Stockholm

AnnaKarin Westberg, Sundsvall

Nordic Center for Digital Presence NCDP

Tampere University, the institution in charge of the research conducted within NCDP, is presently co-operating with Coventry University in the project 'Telepresence in Performance Training and Performing Arts' and planning collaboration with the games department of HINN – Høgskolen I Innlandet, Hamar/Lillehammer, Norway.

NÄTY, Faculty of Information Technology and Communication Sciences (ITC)
Tampere University.

Matias Palo
Studio Manager



NCDP is a continuation of Theater & New Technology. The main purpose of the platform is to provide know how, support and tech for members with interest in remote presence.

100+ members has so far signed up including National broadcasting companies in Finland and Sweden.

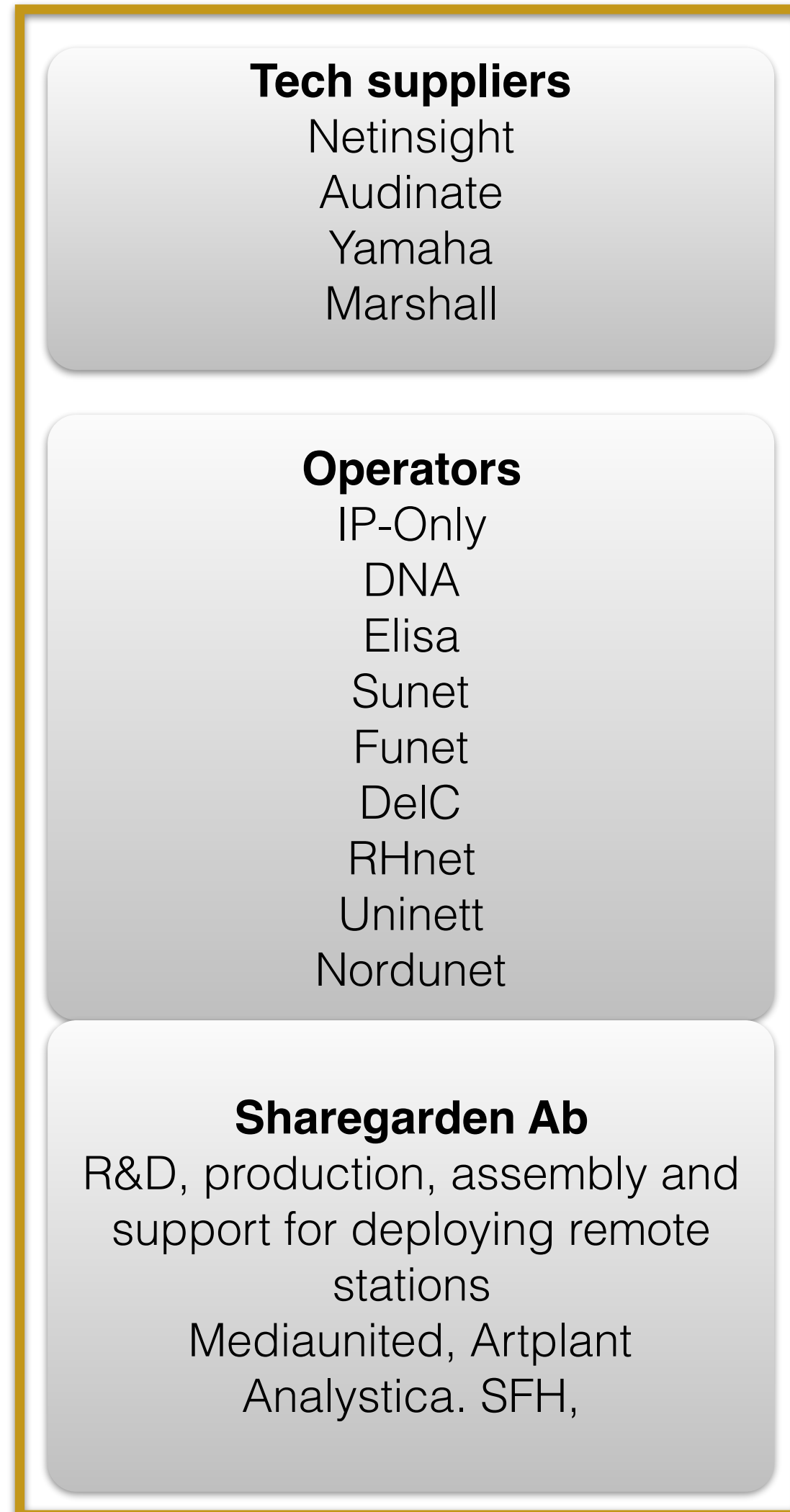
NCDP is administered by Nordunet, the University broadband provider. The Nordic core team meets bi-weekly.

For more info see www.ncdp.eu

Project manager
Mårten Fröjdö

Nordic Center for Digital Presence NCDP

Service providers



NCDP

A nordic platform responsible for developing a Nordic network for remote presence. Deploying new technology and methods and providing member institutions with know how and support.

Managing partner

Nordunet

Curriculum development

Stockholms Musikpedagogiska institut (SMI)

Initiators

Extended TNT network

Beneficiaries

Music education

Nordic municipal, regional and national educations

Performing arts

Private and public theaters in the north

Music industry

Private and public orchestras in the north

Research

Universities and educational institutions with focus on remote presence, technology, theatre and music education, broadcast

Media

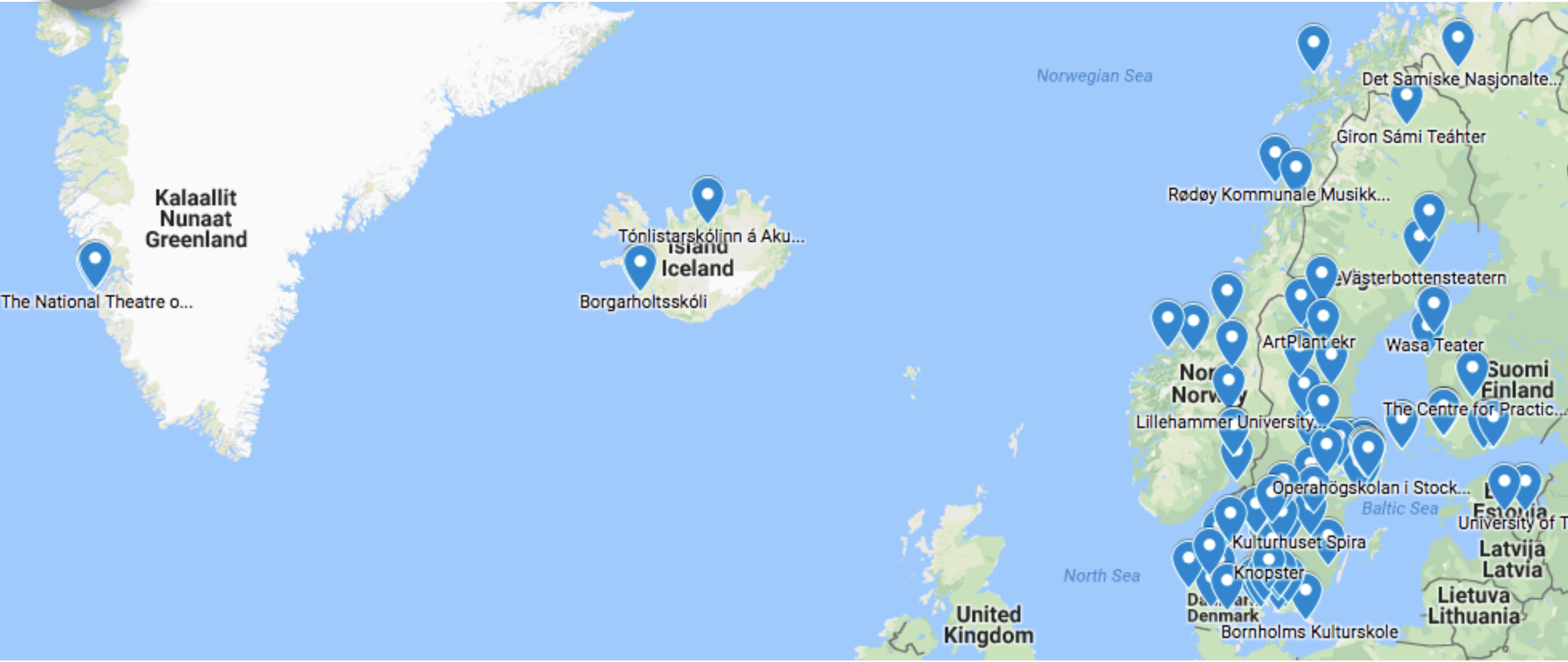
Private production companies and public service

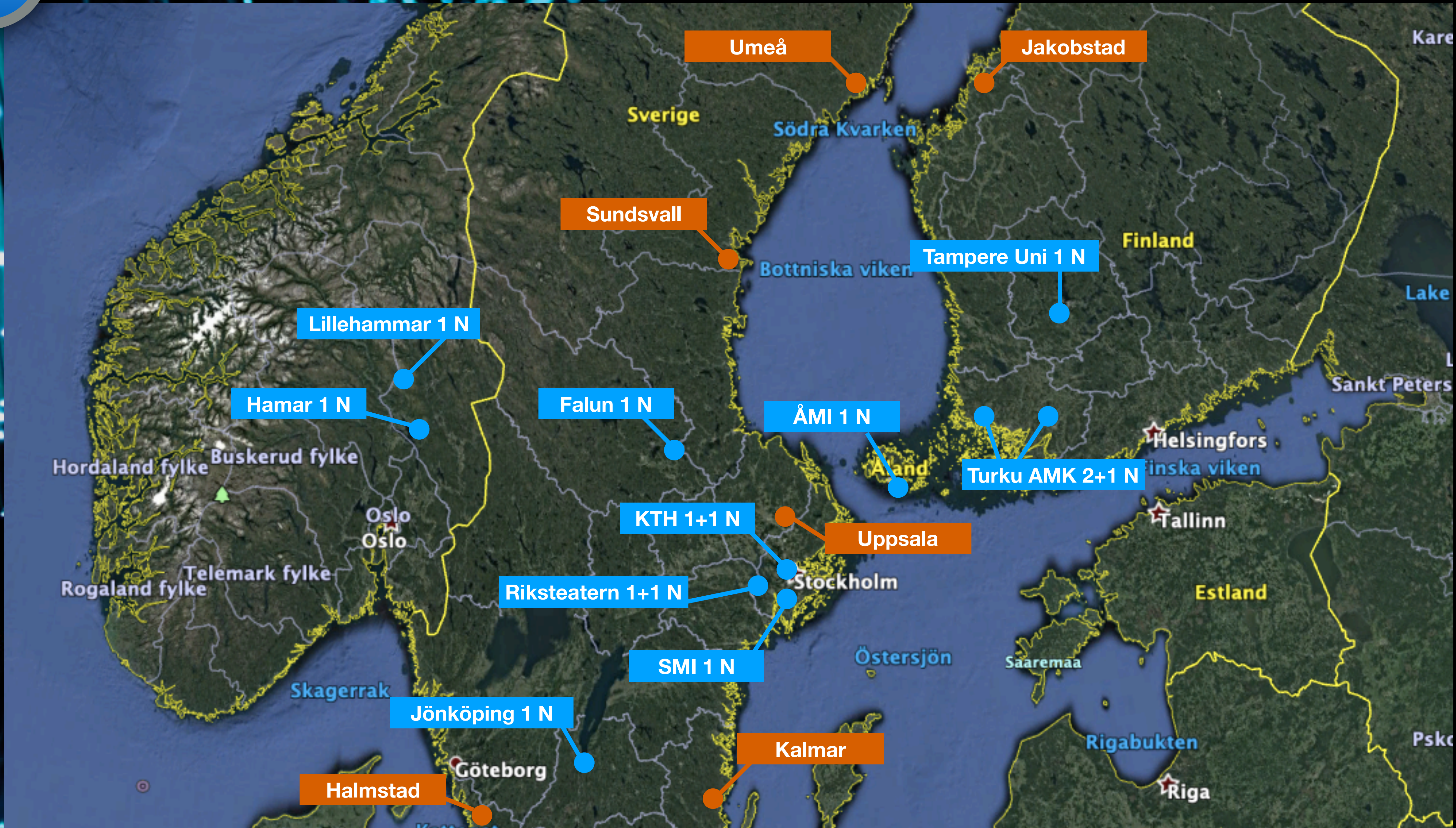
NGO

Community services



Nordic NCDP network

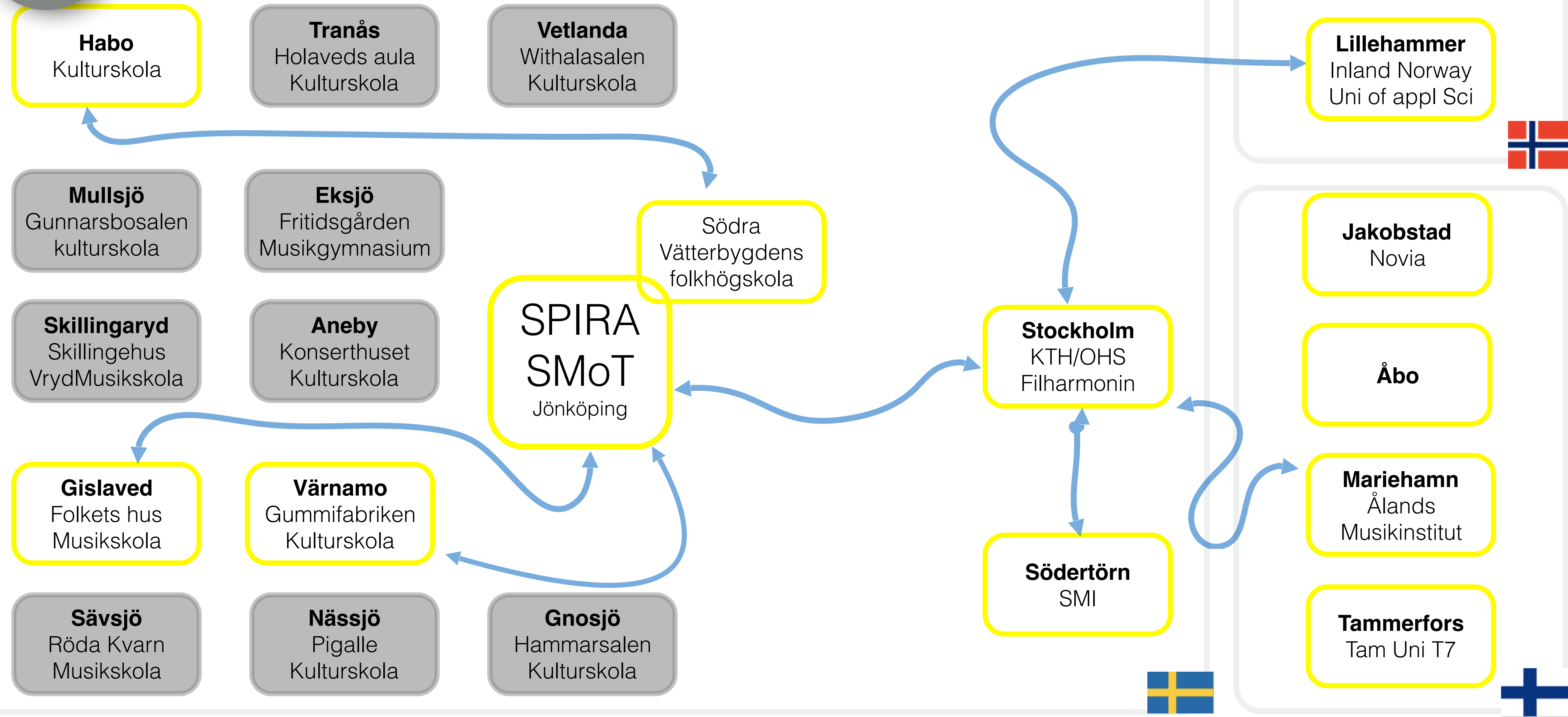




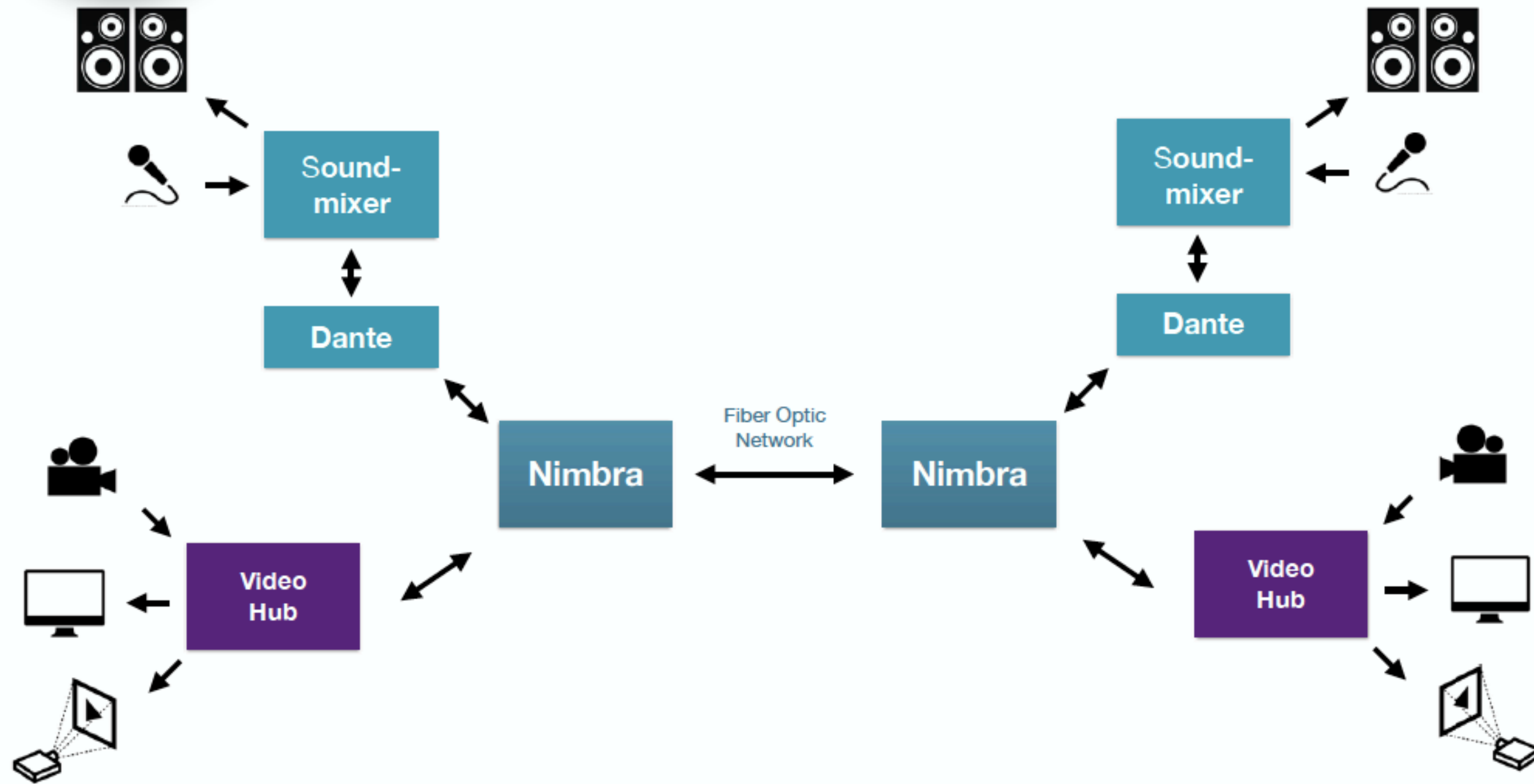
NCDP



Nordic Center for Digital Presence NCDP







We have identified 3 formats

Format A. Music education, monitors 1 x 50-60" + 2 x 24".

Format B. Conference or small ensembles, halfstage 3-5 m projection

Format C. Theater or concert halls, full stage 12-15 m projection

www.ncdp.eu



Student Emilia in Mariehamn



- Number of slots:** 8 for traffic boards, 2 for control modules, 2 for switch planes, 1 for alarm+aux interfaces, 2 for redundant power modules
- Switch Capacity:** 80 + 80 Gbps (unicast), 45 + 45 Gbps (multicast) in redundant configuration
- Interface Modules:**
 - OC-192/STM-64 Trunk
 - 4 x OC-48/STM-16 Trunk
 - 4 x OC-12/STM-4 Trunk
 - 4 x OC-3/STM-1 Trunk
 - 10 GE Trunk
 - 6 x IP/Ethernet Trunk
 - 8 x Gigabit Ethernet Access
 - 8 x Video Access
 - 8 x 3 Gbps Video Access
 - JPEG2000 Video Access
 - 8 x ASI/AES Access
- Synchronization:**
 - Input: 2.048 or 1.544 MHz, G.703.13
 - Output: 2.048 MHz, G.703.13

NET INSIGHT NIMBRA 680 MEDIA SWITCH ROUTER

The Nimbra platform

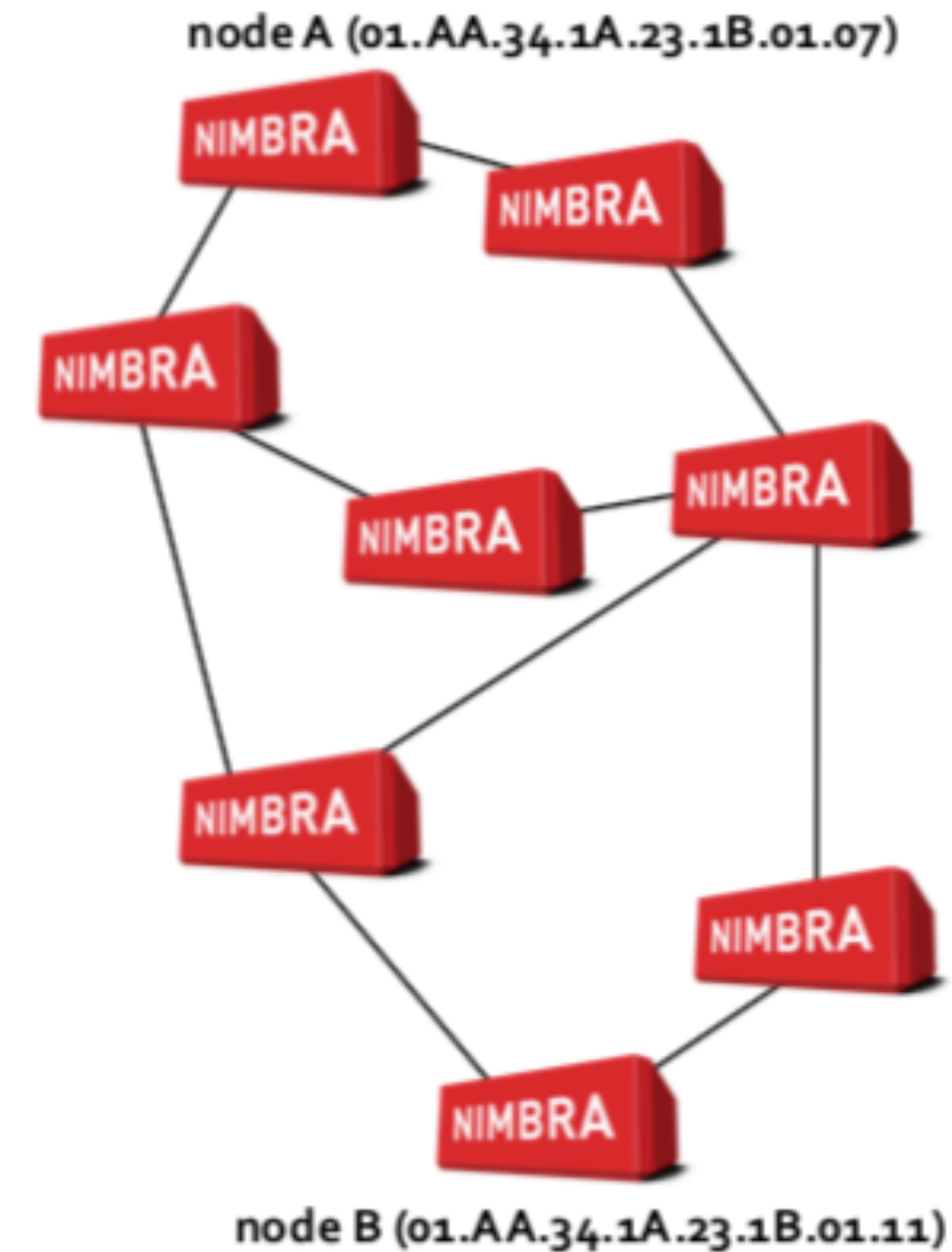
Multiservice Offering and Infrastructure agnostic solution



Any traffic over any network in one multiservice platform

Routing

	IP	DTM
What is routed?	Packets	Channel-setup requests
How do you specify how to reach a destination?	One next hop per destination	All possible nexthops to the destination
Address type	IP address	DTM address



DTM addressing

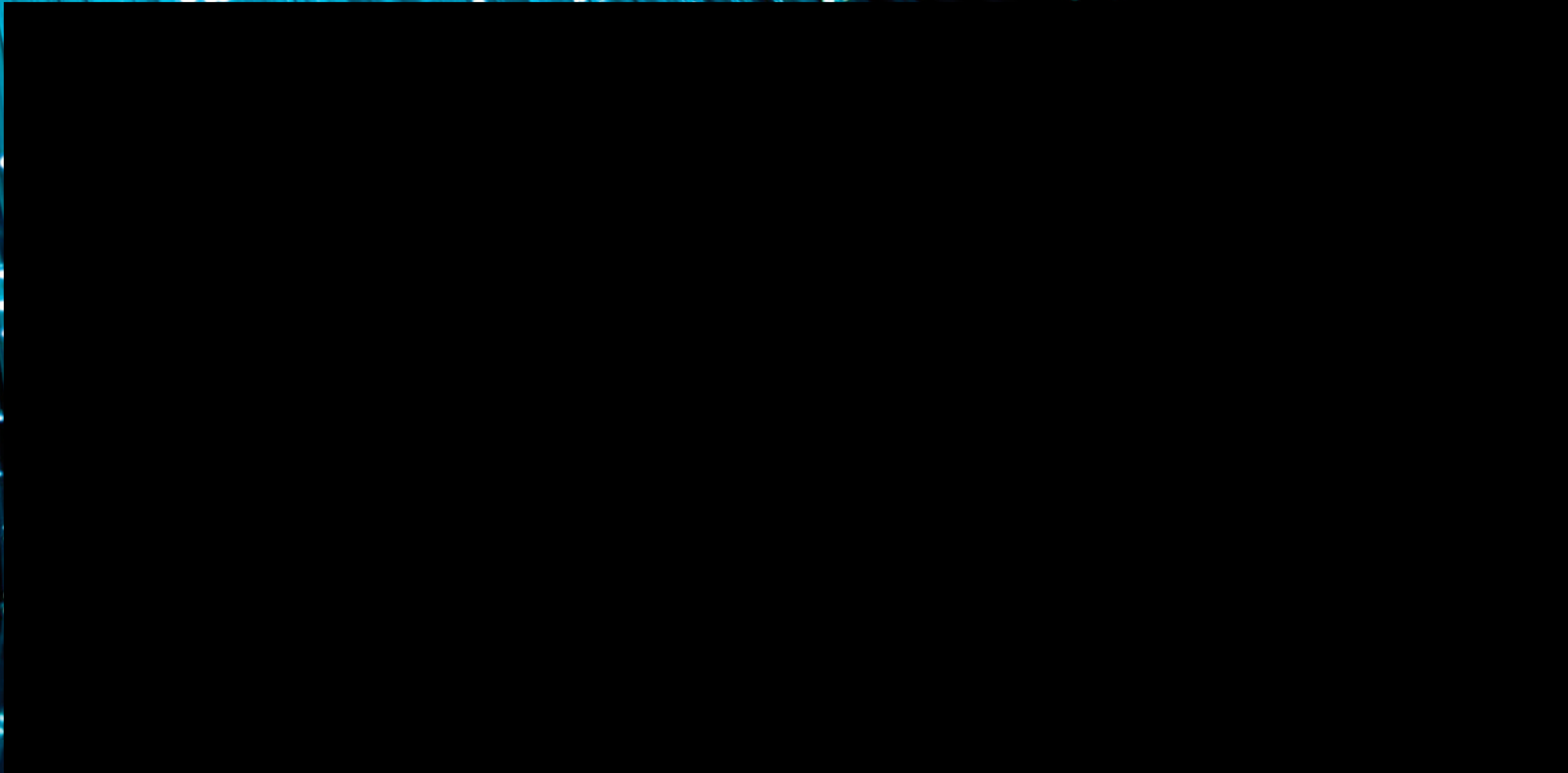
DTM 64 bits (8 bytes) 2^{64} addresses
e.g. 01.AA.34.1A.23.1B.01.07

IPv4 32 bits (4 bytes) 2^{32} addresses
e.g. 192.0.2.235
0xC0.0x00.0x02.0xEB

MAC-48 48 bits (6 bytes) 2^{48} addresses
e.g. 00:0C:F1:56:98:AD

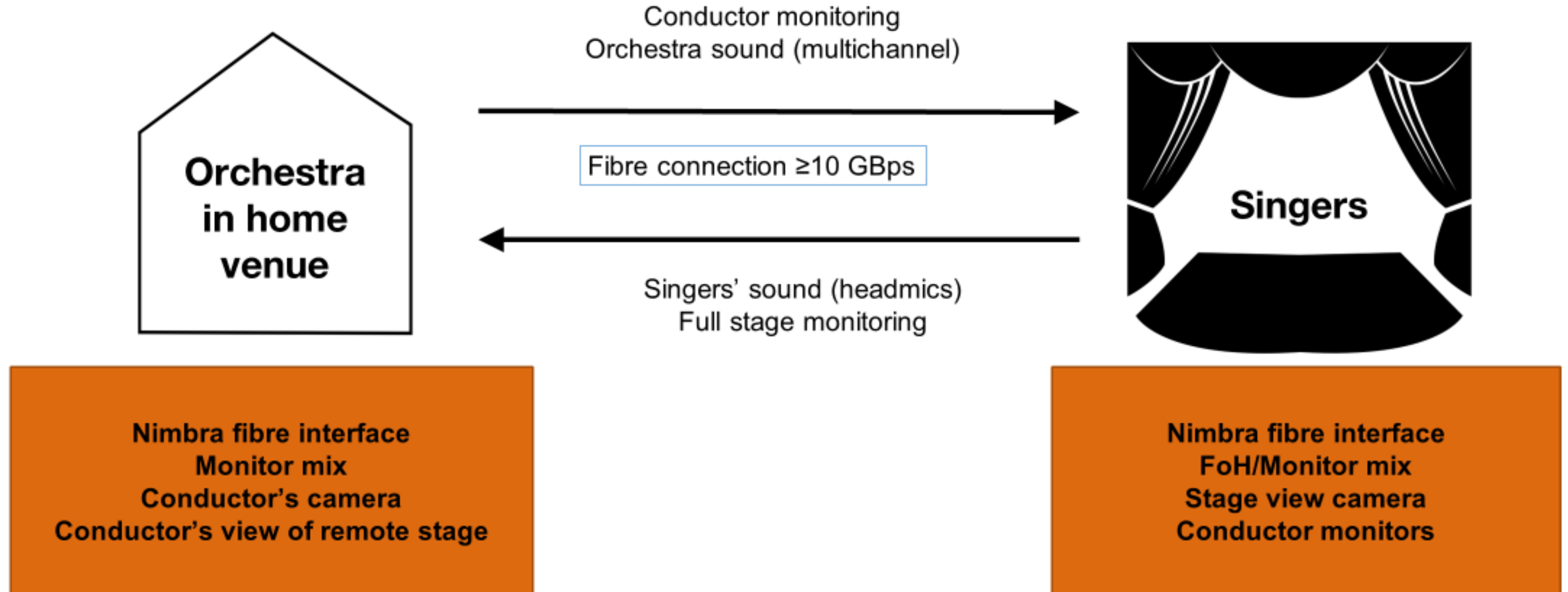
Organizationally Unique Identifier (OUI):
→ Intel Corporation

00:0C:F1



Opera with Remote Live Orchestra

Setup Principles





*Join The
remote north
by signing up
for NCDP info.*

 www.ncdp.eu

Nordic Center for Digital Presence NCDP