



Swiss Radio and Television's New Full-IP Campus

SRF

Sandro Furter | Project Manager | IBC IP Showcase | 11.09.2022

SRG Overview

SRG SSR

Radio



Online

➔ Play Suisse

- Hauptstudios
- Regionalstudios/Büros



SRF

Radio



Fernsehen



inklusive

Teletext, HbbTV

Online

srf.ch, Play SRF, Apps, Podcasts, Social Media

RTS

Radio



Fernsehen



inklusive

Teletext, HbbTV

Online

rts.ch, Play RTS, Apps, Podcasts, Social Media

RSI

Radio



Fernsehen



inklusive

Teletext, HbbTV

Online

rsi.ch, Play RSI, Apps, Podcasts, Social Media

RTR

Radio



Fernsehen



inklusive

Teletext, HbbTV

Online

rtr.ch, Play RTR, Podcasts, Social Media

SWI

swissinfo.ch

Sprachen

Englisch, Deutsch, Französisch, Italienisch, Spanisch, Portugiesisch, Japanisch, Arabisch, Chinesisch, Russisch

Online

swissinfo.ch*, tvsvizzera.it, Play SWI, Apps, Podcasts, Social Media

* Swissinfo bietet seit Mai 2022 vereinzelte Beiträge auch in ukrainischer Sprache an.

SWISS TXT

SWISS TXT

Multimedia-Kompetenzzentrum der SRG

Online

swisstxt.ch

Swiss Wide ST-2110 Network (Project ORION)

- 55 SRG locations migrated
- 100+ migrations, mostly at night
- 157 Core routers replaced
- 800+ patch cable installed
- ~ 3.7km fibre optics
- Migration took 19 months (3 months delay due to COVID-19)
- Tough migration schedule



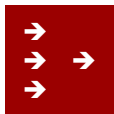


UHD-1

The new News and Sport Centre (NSC)



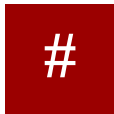
Production Rooms



3 Production Control Rooms
3 Micro-Production Rooms



6 Voice-over Booths
2 Radio Studios



Master Control Room MCR
Media Exchange MEX



AV Acceptance Room
Service Monitoring Center SMC



Newsroom News
Newsroom Sports



3 Studio Floors
2 Presenter Areas / 3 Chatpoints



13 Edit Suites
6 Proxy Edits



Media Management Hub M3H
6 Local Ingest Terminals



1 Multi Playout Operation Room
2 Playout Operation Rooms

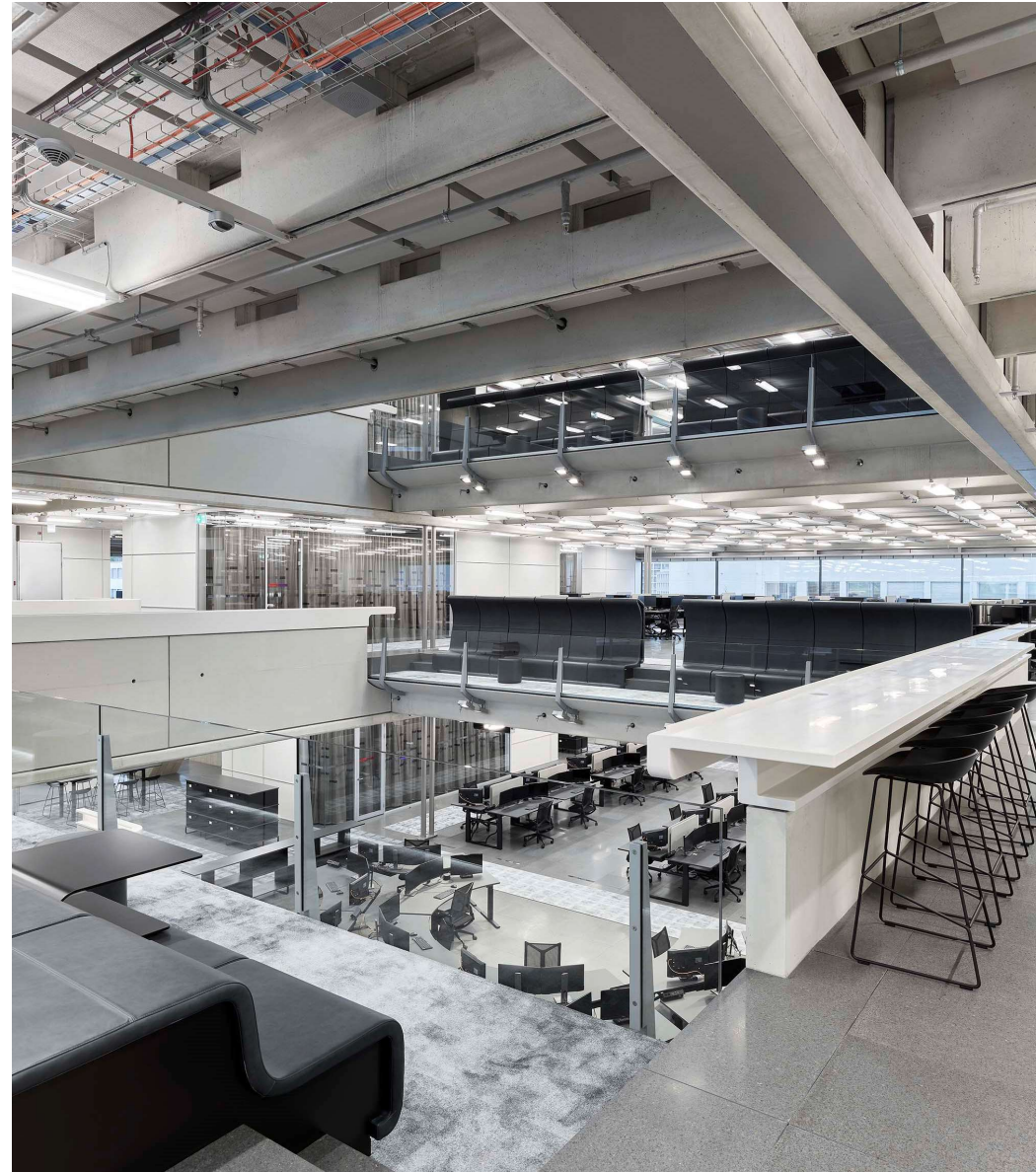


Media Data Center MDC
8 Local Rack Rooms

NSC Facts

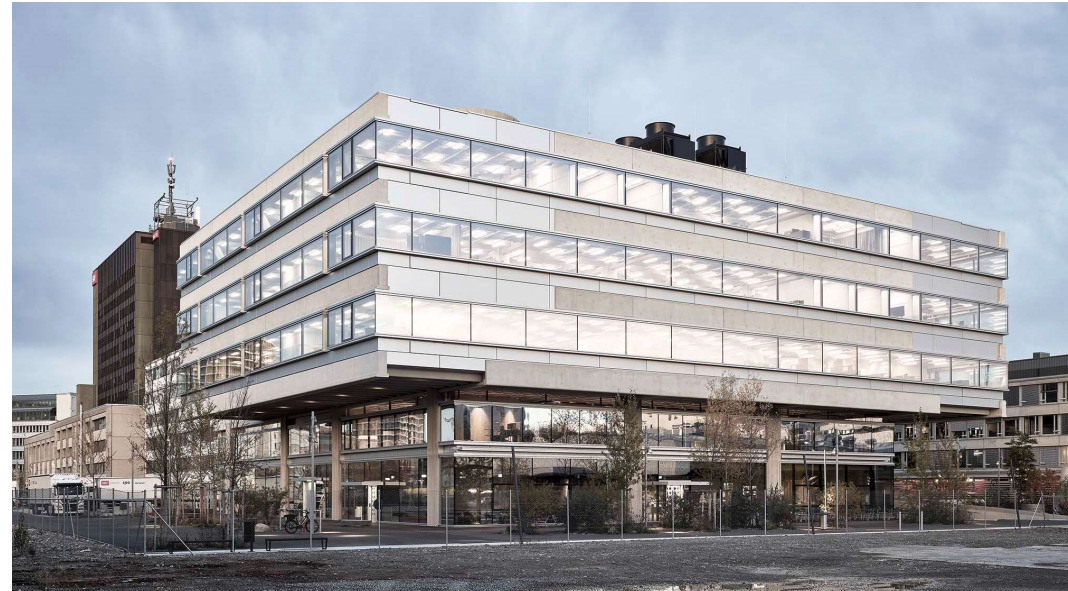
- Open Space and **Non-territorial** Work Places
- Appr. 600 employees on 10'000m²)
- Interdisciplinary **Teamwork**
- Program and Vector **Cooperation**
- Flexibility and Multifunctionality
- **Unified** Post Production News and Sports
- Faster and easier Content Production

SRF



Outside Impressions

- News- and Sportcenter →
- Media Garden Campus ↘
- Building Phase ↓



Inside Impressions

- Helix Stairwell →
- Operations 1st Floor ↘
- Open Space 2nd Floor ↓



Studio Landscape

«We bring the Outside World into the Studio»

- Appr. 400 m² Area Studio Landscape
- Two Presenter Areas →
- 13 Robotic Cameras all over the Building
- 6 LED Walls 1.5mm Pixel Pitch
- Studio Automation System

SRF





SRF

SRF sport

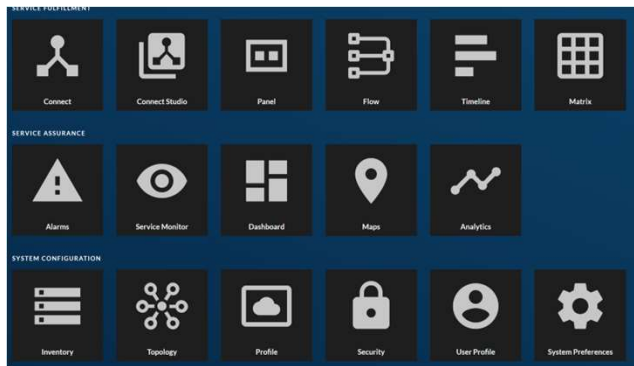
about Technical Innovation

SMPTE ST2110 Realtime Network

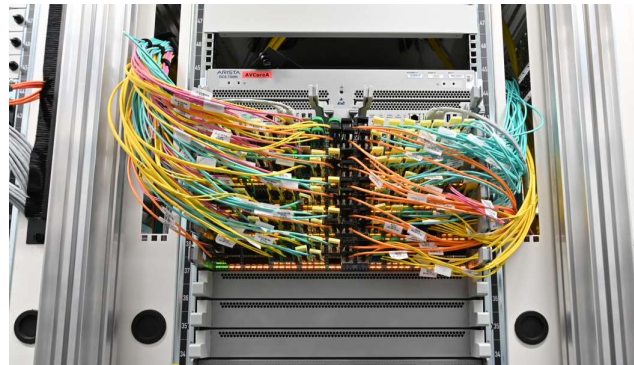
- 526 native IP End Devices
- Approx. 160 Switches
- ~13'000 Video Streams
- ~55'000 Audio Streams
- ~8'000 Ancillary Streams



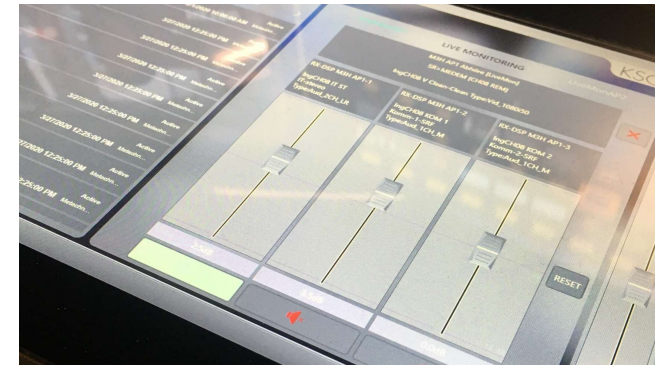
Neveion GUI VideoPath



Arista Spine Switch



BFE GUI GFX Unit



Why and how?

- Because it fits to project goals Flexibility, Scalability and Future-proof
- Because you get your Signals easier, Technology as Enabler
- Because of Process Optimization and Automation

- With Experiences due to POCs and Pre-Projects like TCS and UHD 1
- With strong Partners and direct Interchange with Committees
- With an IP Lab as Know-how Base and Testing Platform
- With Gateways to cover SDI and Driver Development to cover NMOS

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EBU



15.06.2020

Metetchno went successfully OnAir



USERS VIEW

«BOUQUETS»

ORCHESTRATION

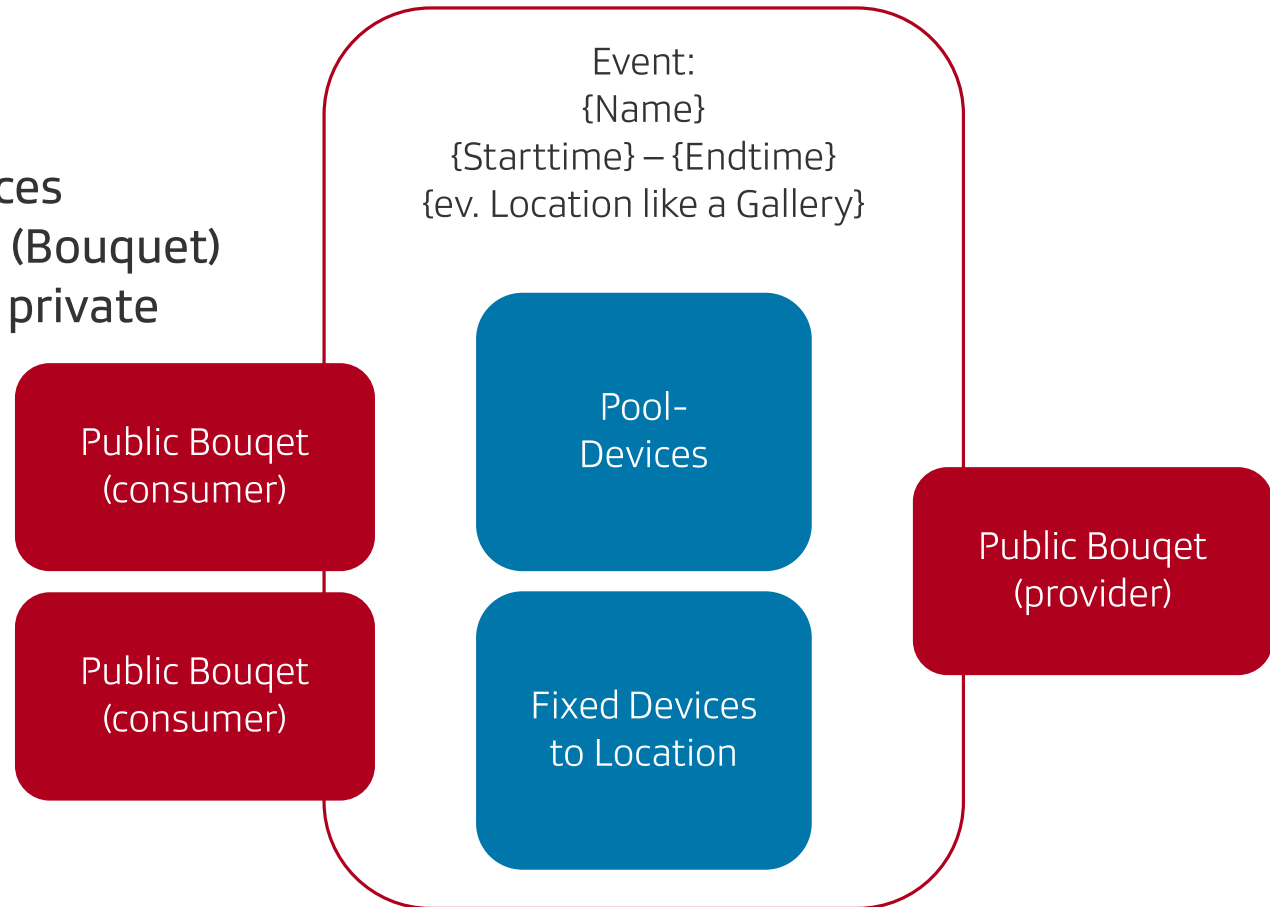
IO PROCESS

Stream configurations aka Audio Profiles

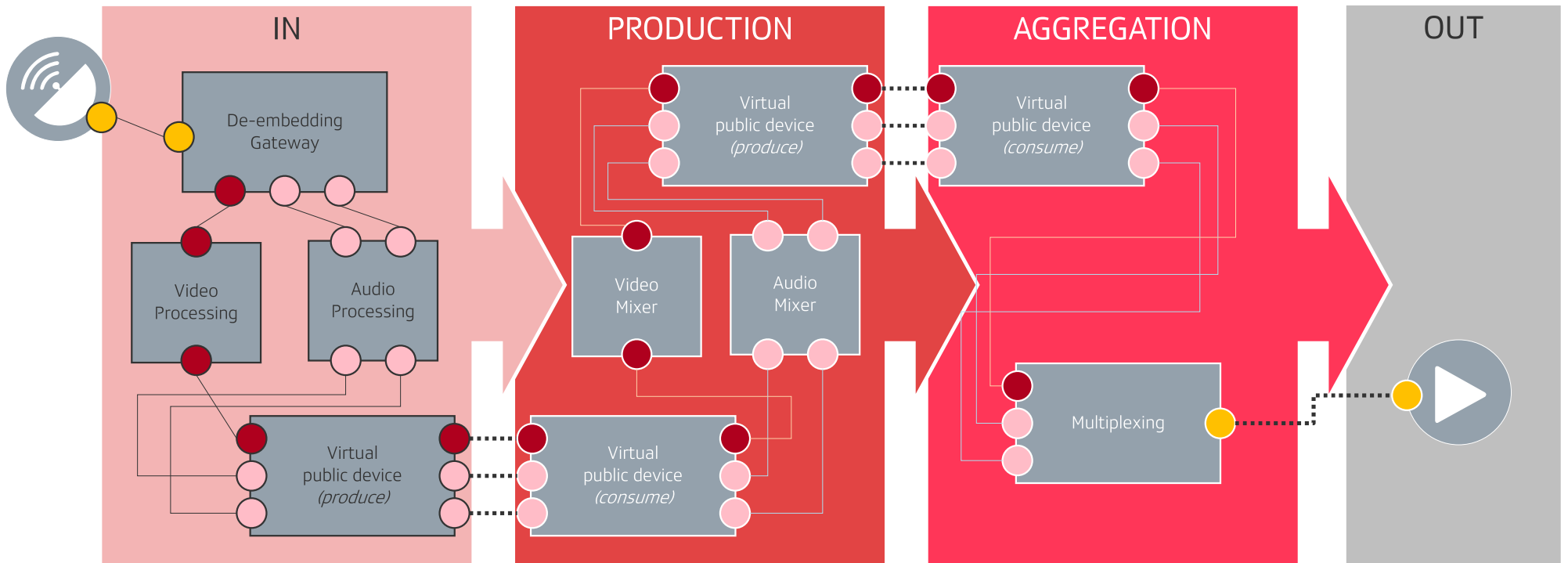
Channels	PackageTime	Samplingrate	Standard
1 Channel	1 ms	48 kHz	ST 2110-30
1 Channel	0.125 ms	48 kHz	ST 2110-30
2 Channels (L/R)	1 ms	48 kHz	ST 2110-30
2 Channels (L/R)	0.125 ms	48 kHz	ST 2110-30
2 Channels (NonPCM / Dolby E)	1 ms	48 kHz	ST 2110-31
3 Channels (L/R/C)	1 ms	48 kHz	ST 2110-30
6 Channels (5.1)	1 ms	48 kHz	ST 2110-30

Eventbased Workflow

- Everything is an Event
- Start & End-Time
- Public and Private Resources
- Virtual Groups of Streams (Bouquet)
- Resources in an Event are private



The big Picture





USERS VIEW

«BOUQUETS»

ORCHESTRATION

IO PROCESS

USERS VIEW

- A well-implemented IP technology is invisible to journalists
- Even a technician in the control room does not notice that ST-2110 flows flies in packets over a network
- The abstraction from the orchestration layer to the end user (in our case the broadcast controller) is helpful
- Having infinite flexibility overwhelms the customer / editor
- Reducing the number of theoretically usable workflows to a realistic number **took us much more time than expected!**



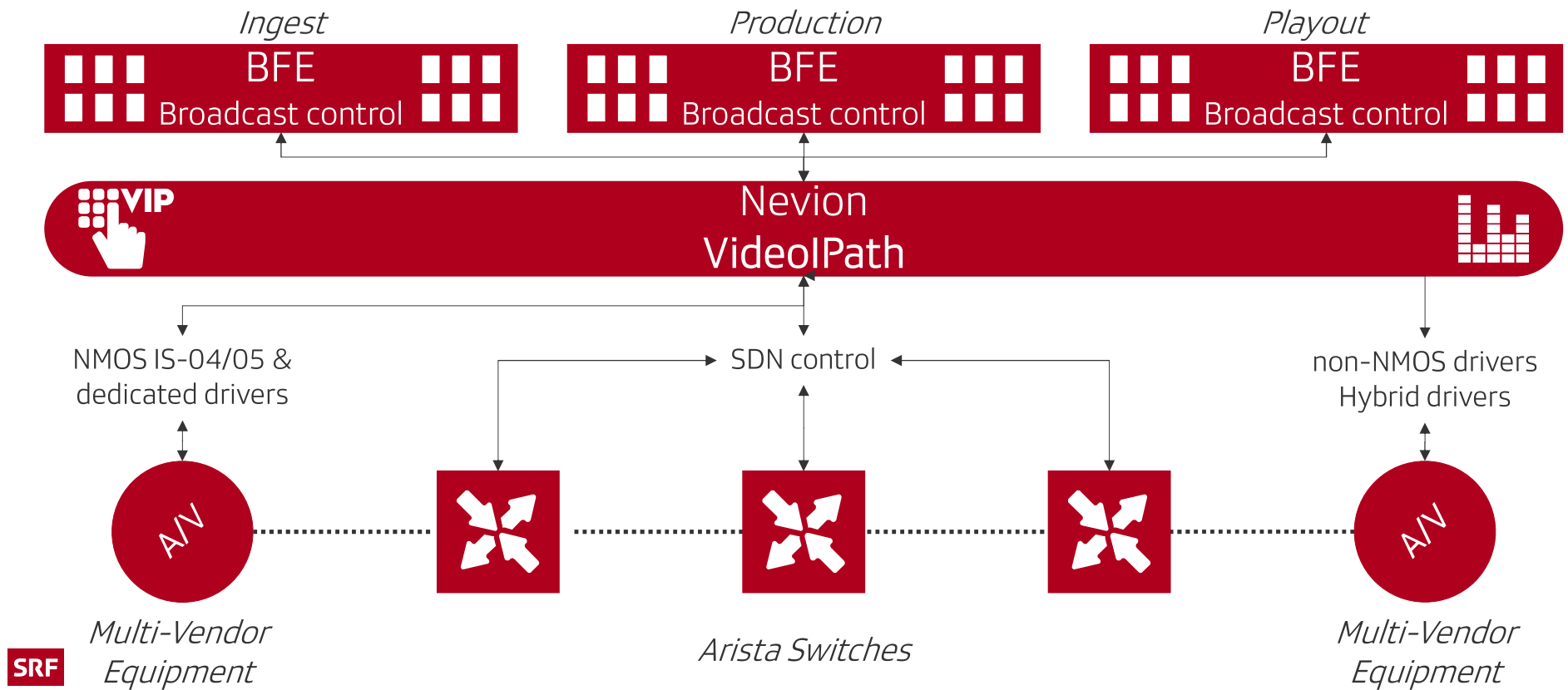
USERS VIEW

«BOUQUETS»

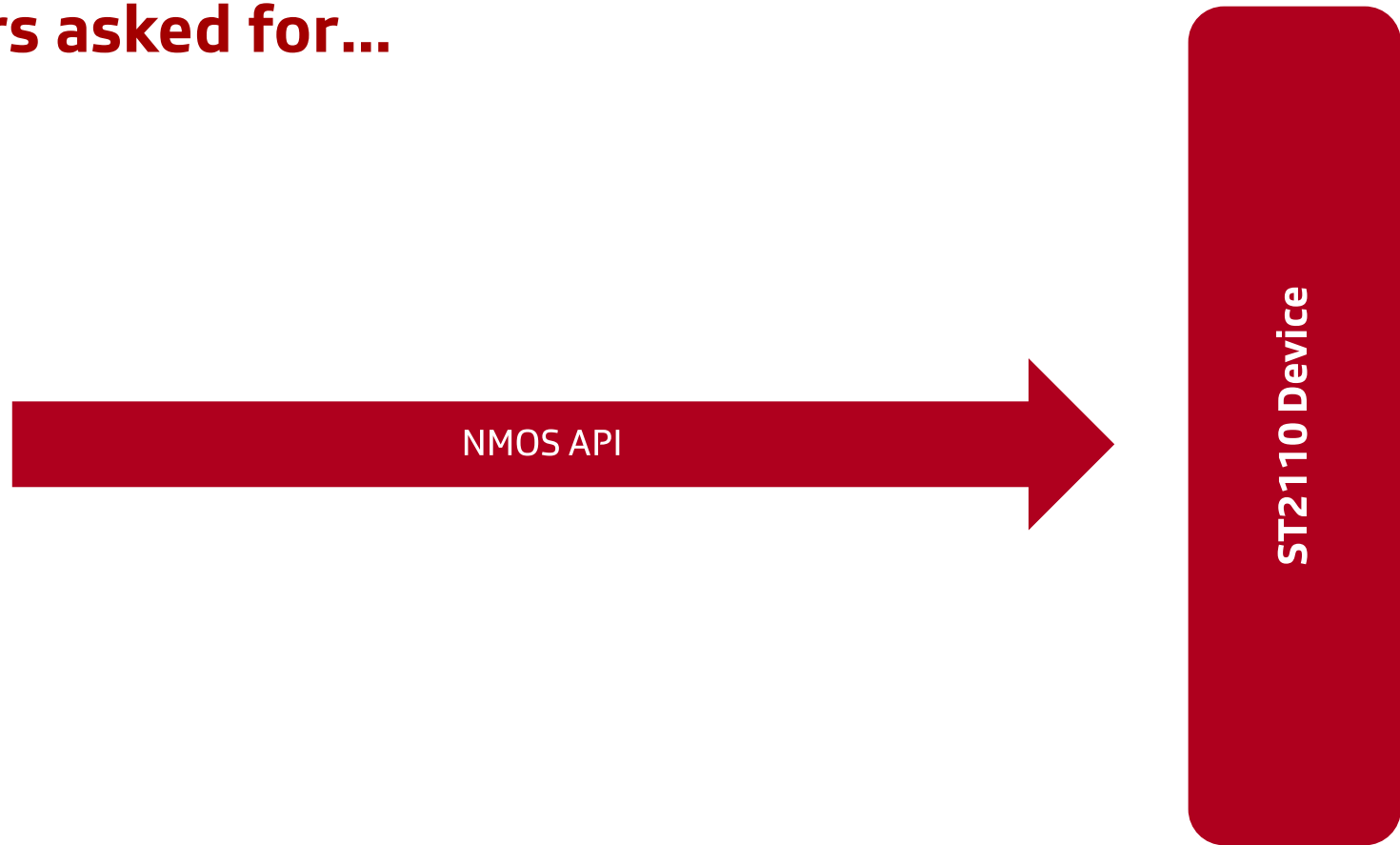
ORCHESTRATION

IO PROCESS

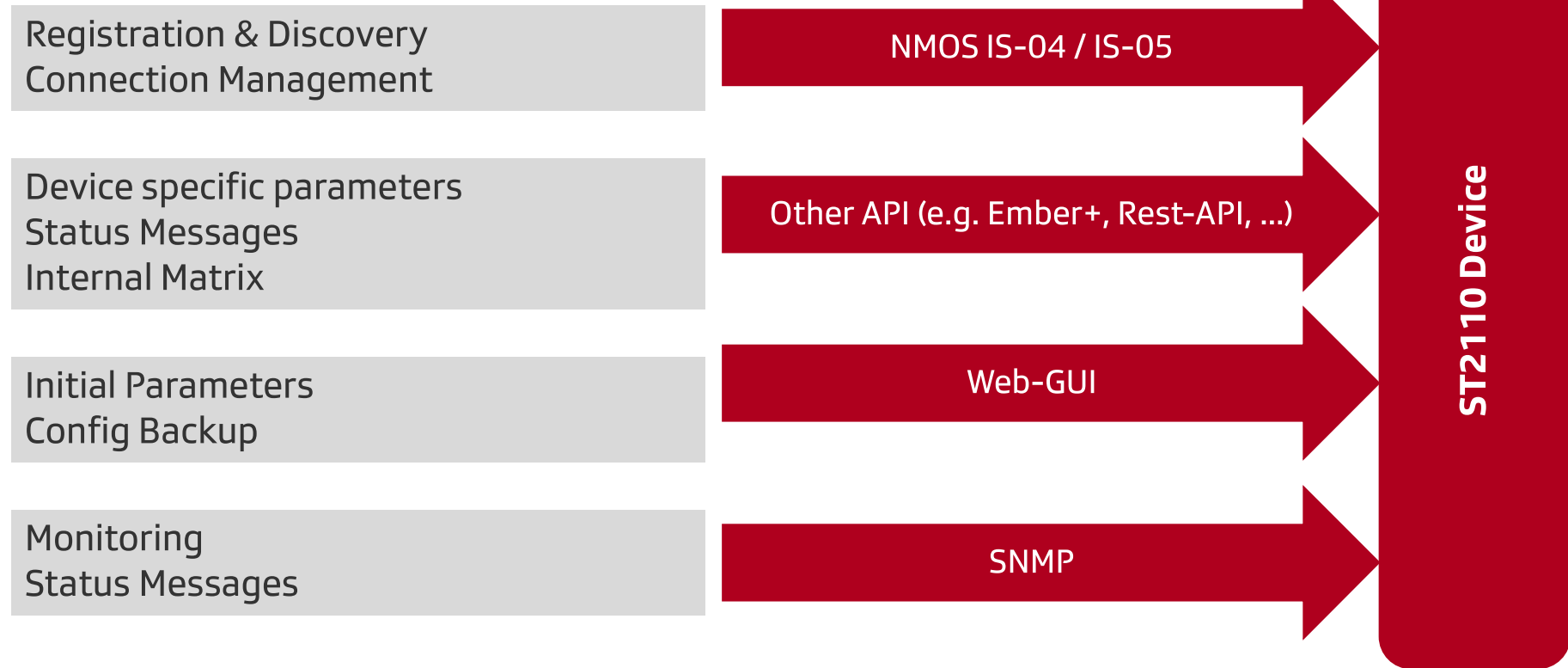
Control Architecture



Our Tenders asked for...



...and where we are now



ORCHESTRATION

- Using a mature orchestrator was one of the best decisions in the project
- Having a centralized tool to manage the whole network including all end-devices simplifies the management of the realtime network
- Having one single source of truth makes debugging easier
- An orchestrator is the best error-reporting and analytics tool
- **Configuration takes way more time as we have estimated**
- Redundancy concepts are complex to handle – but: Have you ever had a similar mechanism to ST2022-7 in SDI?



USERS VIEW

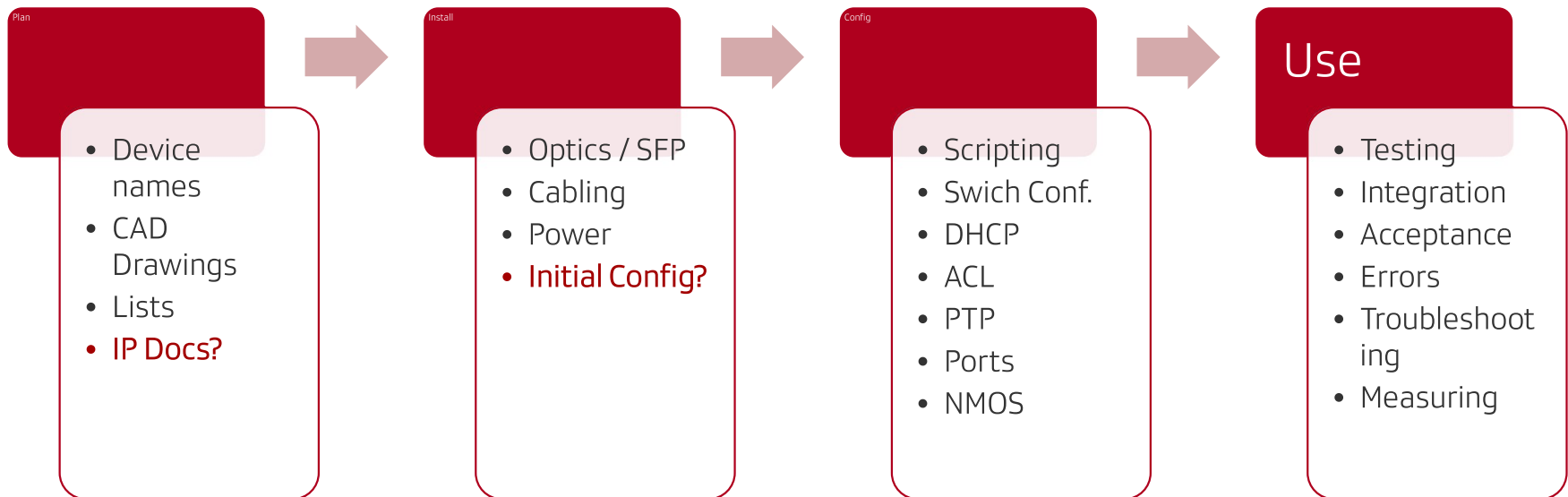
«BOUQUETS»

ORCHESTRATION

IO PROCESS

IO PROCESS

Aka PLAN before INSTALL before USAGE





WHAT'S COMING NEXT?



**still missing:
THE SWISS ARMY KNIFE
ST2110 Edition**

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