



CEREBRUM ADVANCED TECHNICAL TRAINING

This course provides in-depth training on configuring and using Cerebrum to seamlessly integrate diverse studio equipment into a unified operational system. Participants will develop a strong technical understanding of advanced Cerebrum Server features and their integration with modern broadcast-over-IP standards and protocols and will provide engineers with the skills to deliver effective troubleshooting and support.

Target audience: Support engineers/System engineers

Format: Classroom Instructor-lead

Duration: 3 days

Pre-requisites

- Successfully completed the Cerebrum GO online training
- Successfully completed the Cerebrum Basic Technical training
- Local installation of Cerebrum app with enabled demo-mode license

Considerations

1. This training is delivered in English (other languages on request)
2. This training is as workshop approach: hands-on, exploratory, collaborative
3. Once this training is completed, it is suggested that engineers are exposed to field installation and commissioning activities to exercise their acquired knowledge

Agenda

- **Introduction & Cerebrum Workflow Fundamentals**

Objectives:

- Understand Cerebrum philosophy and interface
- Simulate a full baseband workflow build
- Learn essential file management and hardware config
- Practical Exercise: Building out the fictional workflow using Cerebrum

Sections:

Introduction:

- Trainer intro and background
- Overview of training room setup (KVMs, VMs, panel types)

Cerebrum File Structure and Config:

- Difference between Configuration and Project Files
- Export Logs + Backups
- Set up file directories (Designer, Panels, Macros)
- Enable and save Project Files
- Import/Export full projects



Fictional OB Build:

- Design a production truck as a group
- Assign inputs/outputs to:
 - Router 1, + (Possibly Router 2 dependent on experience)
 - Vision Mixer (VMIX)
 - Multiviewers (MV)
 - Cameras
 - Encoders
 - Etc

Router & IO Build in Cerebrum:

- Build virtual router
 - Define levels (e.g. 1 video, 8 audio)
 - Assign labels, mnemonics
 - Label all inputs and outputs
- Use Router XY GUI to test switching via Router direct routing panel, brief intro to Designer app.
- Assign router to Route Master
 - Add sources/destinations, categories
 - Test routing in GUI Category XY, further designer work. Intro to different users.

Virtual, Macros, Salvos:

- Create simple macros and virtual
- Explain concept of virtual vs salvos vs macros
- Discuss engineering creativity in approach

- **Cabling, Panels & Tally Logic**

Objectives:

- Build practical cabling/routing between devices
- Integrate tallies and multiviewers
- Implement GPIOs, Panels, GPI/GPO logic

Sections:

Recap and Questions

- Quick presentation on what was achieved on previous session, go through the entire build from day before.

Device Integration & IO Simulation:

- Create Virtual Vision Mixer (VMIX)
 - Assign router connections (cables)
 - Add Tally, see Tally working in Tally grid.
 - VMIX UMD operation.
- Add and configure Multiviewer (MV)
 - Add 2 x 8-way MV or however many required.



- Explain Alternate Mnemonics and static sources
- Watch tally feedback

GPIO and Tally Logic:

- Add virtual CGP4848
 - Manually configure IP + engineering settings
 - Set GPOs to trigger from tallies

Joysticks:

- Build GPI mapping for racking
- Test routing between cameras and monitors

Hardware Panels:

- Add 1601B and 4801B panels
- Use standard templates
- Configure routing and feedback

Salvos + Audio Shuffle:

- Create multiple types of salvos:
 - Vision switcher salvos
 - TX switch salvos
 - EMG cut salvos
- Demonstrate audio shuffle logic
 - Track-by-track routing via virtuals
 - And audio shuffling sources and destinations.

Soft Panels & Web Designer:

- Build soft panels for roles: EVS, TD, EIC, AIC
- Enable and demonstrate Web GUI

Macros:

- Create a global macro with file variables
- Show routing changes in matrix via macro

- **NMOS & IP Production Setup**

Objectives:

- Transition from baseband to IP production
- Use NMOS for dynamic discovery
- Build full working IP production environment

Sections:

Recap and Reset:

- Go through everything we worked the day before.
- Save the previous day config
- Delete config and start from scratch for IP build



NMOS-Based Workflow:

- Connect to NMOS registry (shared server)

Build new configurations using IP devices:

- IP Router sources/destinations
- Routemaster labels
- Assign categories
- Enable device tallies, panels, macros from scratch
- Build onto Panels and Guis for full routing.

Compare Baseband vs IP Builds:

- Router vs IP Router
- Labelling differences
- Levels
- Route master complexity
- Category

Neuron Setup Exercise (optional):

- Reset all Neuron settings apart from the Management IP
- Configure:
 - PTP (profile, master, reboot if needed)
 - NMOS settings (static vs mDNS)
 - Media IPs
 - Video/Audio/ANC stream outputs
 - Validate using SDI output

Create own NMOS Server:

- Connect Neuron to your NMOS Server and see in the IP router.
- Build the Neuron out in the Routemaster and make it routable.

Test Config:

- Full rebuild of configuration: VMIX, Panels, GPIO, Tallies
- Assign physical panels to builds.
- Assign GUI's to build.