RTS PROGRAM DISTRIBUTION AND PROGRAM BROADCAST SYSTEM
Distribution of five programs

- RTS 1
- RTS 2
- RTS Digital
- RTS SAT
- RTS HD (Test)

All programs distribution is in SD except RTS HD
Program distribution supports

- Two Master Control Rooms (MCR)
  - MCR in Production and Broadcasting centre - Aberdareva
  - MCR in Production and Broadcasting centre - Kosutnjak
- Audio/Video Control Rooms - Continuities
  - Situated in Production and Broadcasting centre - Kosutnjak
- VTR Control Rooms with VTR machines and Audio/Video Servers control
  - Situated in Production and Broadcasting centres – Kosutnjak and Aberdareva
**RTS PROGRAM DISTRIBUTION**

- **Master Control Rooms**
  - MCR Aberdareva and MCR Kosutnjak are connected with fiber optic cables
  - Audio/video content is sent through 8-channel fiber optic CWDM duplex system (SD and HD uncompressed)
  - RTS Gigabit Ethernet connection with possibility for MPEG-2/MPEG-4 audio & video distribution
Master Control Room - Aberdareva

- Supports four studios in Production and Broadcasting centre in Aberdareva (Studio 2, Studio 3, Studio 10 and Studio 11)
- MCR Aberdareva is contribution centre for almost all external signals
  - Microwave terrestrial digital links – receive side is in “Palata Beograd” building and signals go through fiber optic to MCR
  - Satellite downlink point – system consists of satellite antennas and integrated receivers and decoders
  - Receiving signals from digital and fiber optic links owned by RTS and in cooperation with “Telekom Srbija”
  - Fixed uplink earth station – transmitting items for EBU exchange and live events for EBU and other televisions
**Master Control Room - Aberdareva**

- Monitoring, control and routing all signals for studios, VTR (recording and playout) and for MCR Kosutnjak
- Operating in SD format with some signal sources in HD
- HD OB-VAN through fiber optic, satellite receivers, few VTRs
- Plans for renewing equipment to be HD/SD multiformat in one router with embedded audio and additional equipment
**RTS PROGRAM DISTRIBUTION**

- **Master Control Room - Kosutnjak**
  - Supports two studios in Production and Broadcasting centre in Kosutnjak (Studio 8, Studio 9) and audio/video control rooms (continuities) for program playout
  - MCR Kosutnjak is contribution centre for signals from RTS’ regional studios
  - MCR Kosutnjak is distribution centre for all RTS programs
  - Signals of three RTS programs (RTS 1, RTS 2, RTS Digital) are in SD format (with embedded audio) and distributed for broadcasting in baseband
Master Control Room - Kosutnjak

- Monitoring, control and routing all signals for studios, VTR (recording and playout) and for continuities
- Operating in SD format but completely HD ready (routing switcher, master control switchers, VTRs are multiformat HD/SD capable)
Audio/Video Control Rooms - Continuities

- Situated in Production and Broadcasting centre - Kosutnjak
- Four control rooms for RTS 1, RTS 2, RTS Digital and RTS Sat
- Control rooms for RTS 1 and RTS 2 are equipped with master control switchers (Harris IconMaster)
- Master control switchers are connected to main routing switcher (HD/SD multiformat Harris Platinum MX)
- Master control switchers are operating in SD, but they are completely HD ready
- Master control switchers are equipped with six keyers (4 internal and 2 external), DVE, enhanced audio control and bypass/emergency input
Audio/Video Control Rooms - Continuities

- Control rooms for RTS Digital and RTS SAT are equipped with audio/video mixers GVG Indigo
- Indigo mixers are connected to main routing switchers, but via routing switcher control panels as pre-selectors for router inputs
- Indigo mixers are operating in SD with embedded audio) but they are not HD ready and with much less features than master control switchers (w/o DVE, only two keyers etc.)
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Audio/Video Control Rooms - Continuities

- Channel branding system - ORAD
- All logos, “flags”, crawls and other secondary events
- Operations are completely manual
- We are using 4 DVCPRO and 4 Beta SP and audio/video server for commercials and video clips
- Plans for completing the whole system mean to purchase:
  - Additional master control switchers
  - Audio/video servers with storage
  - System for automatization
• Since 2010, program broadcasting is obligation of new founded public company “Transmitters and links”
• All programs (except RTS Sat) are distributed to them as SD signals with embedded audio in baseband (uncompressed)
• Using their transmitters and links network they cover all territory of Serbia with our signals
• RTS distribute signal of RTS Sat program to our partner “Telekom Srbija” and they are responsible for program distribution in Europe, North America and Australia
• RTS provides signals for cable, IPTV and web streaming operators
THANK YOU!