

MAYAH Communications Application Note 35

Backup

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1. General description

Backup means that the MAYAH Codec establishes automatically a fail over line when the main line loses framing or audio. Fallback to the main line will be done device dependently.

1.1 Centauri II

While fail over line is still active the main line is watched. The Centauri II switches automatically back to main line when it reaches framing state or an audio signal is valid for a configured time.

1.2 C11xx

While fail over line is still active the main line is watched for RTCP/IP receiver reports. If the receiver indicates that the main line is good the fail over line will be closed and the main line will be reestablished. Backup mode is on C11xx only for main lines with RTP/IP available.

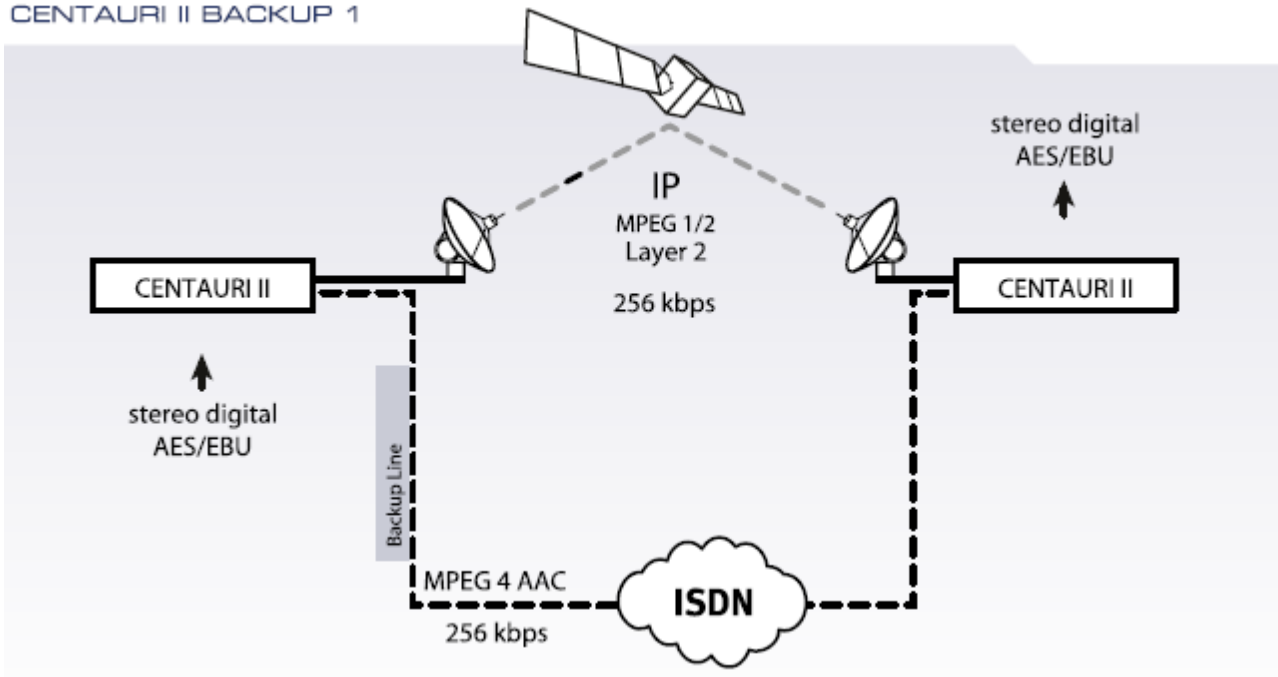
2. Technical description

In backup mode the MAYAH Codec runs two sub codec whereas the first sub codec is responsible for the main line and the last available sub codec (usually sub codec 2) is responsible for the fail over line.

The backup time will be used to switch from main to fail over line. The backup mode defines the action which happens on fail over condition. Fail over condition can be framing lost or audio lost after configured time.

X.21 satellite line with ISDN fail over on Centauri II:

CENTAURI II BACKUP 1



In the diagram above an X.21 satellite transmission using MPEG L2 with a bit rate of 256 kbps is backed up with an ISDN connection using AAC (MPEG 4) with a bit rate of 128 kbps. Since AAC (MPEG 4) is a much more efficient coding algorithm than MPEG L2 both main line and fail over line reaches nearly transparent quality.

2.1 Restrictions

Theoretically any kind of transmission can be backed up with any other kind of transmission. However, there are a few restrictions:

- When backup line is established between two MAYAH codec which are responsible for the main line then even on the none establishing MAYAH codec the backup mode should be switched on
- If the backup line uses IP then RTP/IP must be used
- X.21/V.35 connections cannot be backed up with another X.21/V.35 connection
- Backup mode cannot be used if gateway mode, dual codec mode or point to multi point (PMP) is active

2.2 Considerations

In the following considerations it assumed that the backup line uses sub codec 2 (which is the case for C11xx, CENTAURI II, MERK II and GANYMED 1102).

2.2.1 Last ISDN B-channels

Since there is no special parameter to determine which B-channels are assigned to sub codec 1 (main line) and sub codec 2 (backup line) in backup mode the last available B-channels are automatically assigned to sub codec 2. This means:

- At ISDN backup phone book entries the last ISDN numbers must be used e.g. with a CIM40 ISDN card and a bit rate of 128 kbps the numbers must be assigned to #8 and #7 (only for firmware versions less than 2.3.4.0).
- At a backup scenario using ISDN for fail over the ISDN cables must be connected to the last S0

ports e.g. at a CIM40 ISDN card and a bit rate of 128 kbps the ISDN cable must be connected to S04.

2.2.2 Different IP ports at the sub codec

At RTP/IP different sub codec use different RTP ports. This means that e.g. sub codec 2 uses port 5014 and 5015 by default. However, when the backup connection should be established to sub codec 1 of another MAYAH codec then the ports 5004 and 5005 must be used.

3. How to use on MAYAH devices

It is strongly recommended to test independently the main line connection and the backup line connection i.e. test of both connections with inactive backup mode. However, the notes of item 3 and 4 should be considered.

3.1 via Front panel

3.2 with Direct Commands

3.2.1 Backup mode

- 0 disabled
- 1 use last connection
- no. use phonebook entry with no. - 2

3.2.2 Backup time

The backup time determines in ms how long the main line must be unframed since it is switched to the fail over line. Furthermore the backup time is also the fallback time from backup connection to main connection.