Ericsson – Regional Insertion System

TV4 in Sweden have commissioned and operated a series of Regional Insertion Systems built by Starfish Technologies. TV4 is Sweden's largest independent TV channel and operates in competition with public service channels and other commercial independent broadcasters. The Starfish Regional Insertion Systems enable TV4 to add local advertisements and programming to over 30 regions within Sweden and have been commercially very successful earning significant revenue and a rapid return on the investment in this technology.

The latest of these systems is known as E–Play and was commissioned by Ericsson Broadcast Services, who now manage the TV4 transmission service.

The E-Play system takes HD and SD video inputs and delivers 61 different regional variants in a fully redundant configuration. Regional content comes from several different sources and E-Play returns as-runs, receipts and other data to report on the local content insertion. After regionalising the content, E-Play encodes it into a range of bitrates and formats (currently 3 x MPEG-2 bitrates for SD and 2 x H.264 bitrates for HD). These are delivered as ASI and/or IP. E-Play also encodes audio as Dolby Digital and Dolby Digital Plus where required.

The system inserts SCTE-35 and SCTE-104 data into the signals. It is capable of inserting Teletext and DVB subtitles as well as other data into both the SDI and encoded outputs as appropriate. It inserts logo and clock graphics under automation command and can insert open subtitles. These elements can be different for each region.
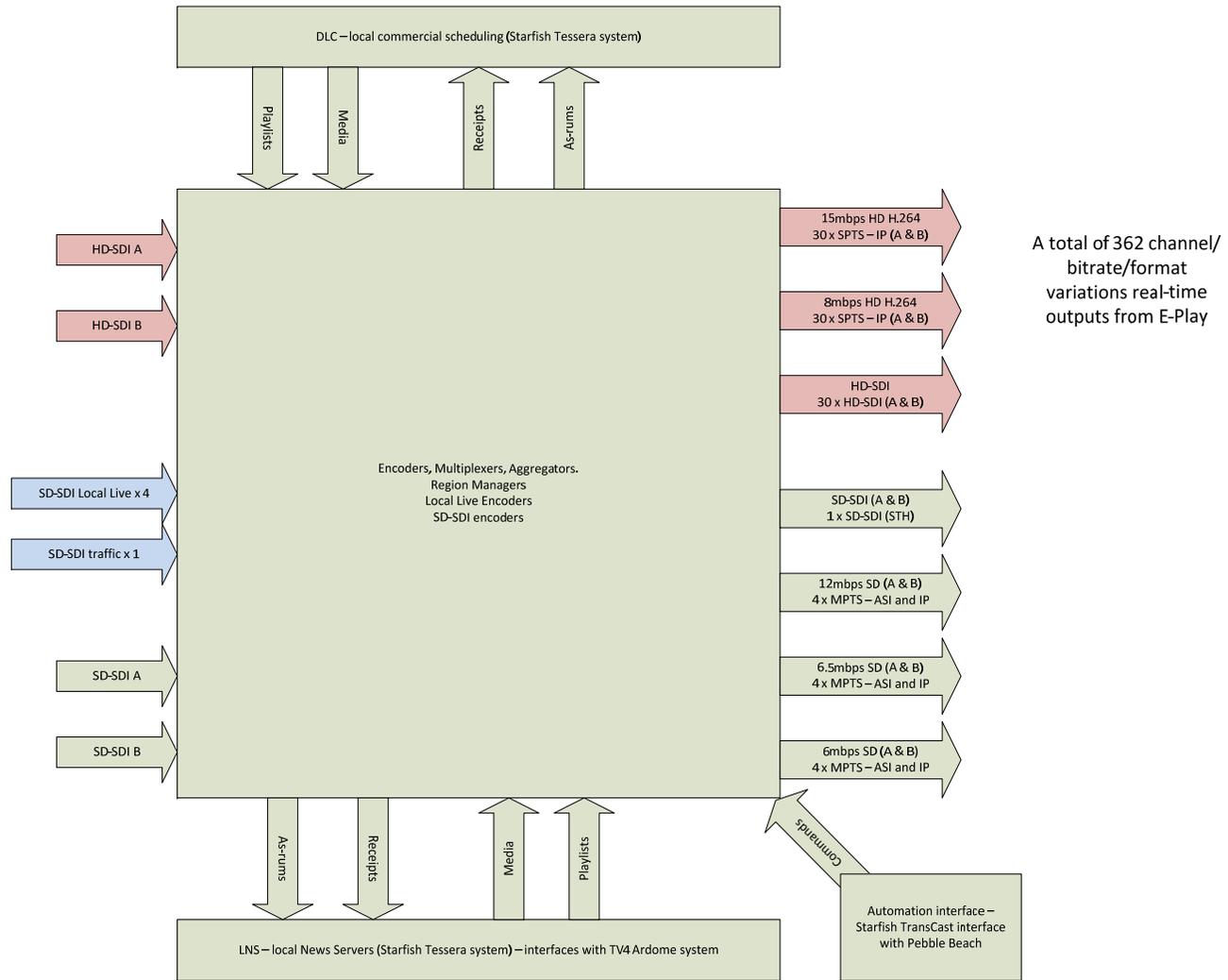
In addition to these core functions, E-Play also features Compliance recording - All the regional content is recorded, transcoded and delivered to long term storage. In addition, other transcoded versions of some local content are used for TV4 VOD services.

Sophisticated monitoring systems are incorporated and these allow users to analyse and view all the outputs. They will generate warning email and SMS messages when problems are detected.

The E-Play system is fully automated. It requires no manual operation and is highly resilient, being based on 1+1 and N+2 redundancy schemes. It will automatically cope with hardware failure, partial input failures and other problems – utilising hot spares where appropriate.

The system architecture uses several standard building blocks. It is a PC-based system utilising HP and Cisco hardware and running the Microsoft Windows 2008R2 operating system.

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E-Play Overview

DLC — local commercial scheduling (Starfish Tessera system)

Playlists

Media

Receipts

As-runs

HD-SDI A

HD-SDI B

SD-SDI Local Live x 4

SD-SDI traffic x 1

SD-SDI A

SD-SDI B

Encoders, Multiplexers, Aggregators.
Region Managers
Local Live Encoders
SD-SDI encoders

15mbps HD H.264
30 x SPTS — IP (A & B)

8mbps HD H.264
30 x SPTS — IP (A & B)

HD-SDI
30 x HD-SDI (A & B)

SD-SDI (A & B)
1 x SD-SDI (STH)

12mbps SD (A & B)
4 x MPTS — ASI and IP

6.5mbps SD (A & B)
4 x MPTS — ASI and IP

6mbps SD (A & B)
4 x MPTS — ASI and IP

A total of 362 channel/
bitrate/format
variations real-time
outputs from E-Play

As-runs

Receipts

Media

Playlists

Commands

LNS — local News Servers (Starfish Tessera system) — interfaces with TV4 Ardome system

Automation interface —
Starfish TransCast interface
with Pebble Beach

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E-Play Installation

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