

## TV4 Sweden – Centralised Regional Insertion System

TV4 is Sweden's largest independent TV channel, and operates in competition with public service channels and other commercial independent broadcasters.

TV4 selected Starfish Technologies to design and build its DLC local advertising insertion system in 2004, and this proved very successful operationally and commercially.

The DLC system used a distributed architecture with remote playout servers located at 30 remote hosting and distribution sites around Sweden. Material was ingested centrally, and each remote playout system collected and stored all the material it required to playout its individual opt-out schedule that was created and delivered from a central scheduling system.

Following the success of this system, TV4 awarded Starfish a contract to build a new regional content insertion system, but this time with a centralised architecture where all 30 channel playout systems would be located in their main playout centre in Stockholm. This system was named CPlay. The advantages of a centralised architecture include: Material can be prepared and delivered to the regional playout servers very close to transmission time, therefore making possible the introduction of an effective local news service in addition to the regional commercial insertion capabilities. It's also faster to load large media files making it more convenient to schedule long form program replacements, and in addition, the architecture offers the possibility of live event insertions into each region.

In addition to the operational benefits, it's also obviously much easier to service and maintain a system that is located in a single, environmentally controlled, location as opposed to multiple remote locations.

An important feature of the Starfish system is that it also provides multiplexed outputs containing up to 10 of the regions. For the CPlay system, TV4 required 4 multiplexed streams that can carry up to 10 channels per stream. Within CPlay, Starfish also insert station logos and a full Teletext service on each of the 30 regions.

System reliability is inherent in the Starfish design through the use of multiple levels of redundancy with automated system monitoring and failover. The hardware used throughout is Enterprise grade IT technology with generic servers and networking systems supplemented by specialist Video interfacing technology.

The complete system went live in 2009 and continues to provide a reliable and successful service for TV4 and its viewers.



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