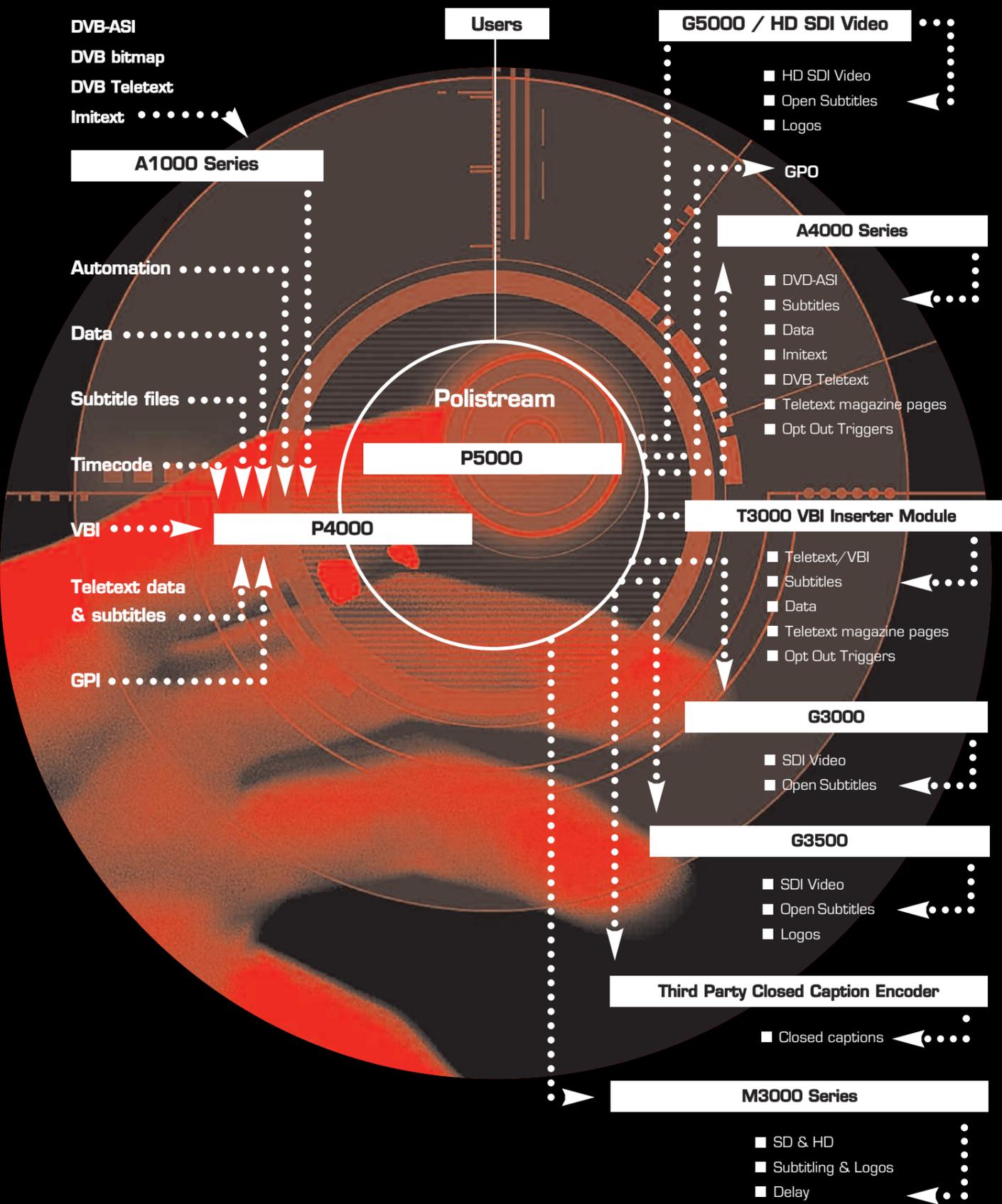


**TRANSMISSION**  
*POLISTREAM*



### introducing polistream

Our Polistream family of products offers a full range of solutions for all your subtitling needs from transmission right through to monitoring and logging. The Polistream product range greatly simplifies the control and management of subtitle delivery by employing modular software and flexible processing platforms.

The Polistream system is designed to provide the broadcaster with the ability to implement and control the transmission and monitoring of subtitles and graphics in a simple, cost effective and flexible way. Polistream has been developed using proven technologies, combined with advanced encoding, streaming and distribution techniques. Polistream manages the subtitling transmission for any mix of DVB, Teletext, closed caption, Imitext and open subtitles as well as other data including graphics.

### polistream P5000 and P4000 processing platforms

All of the core Polistream systems (with the exception of D4000, our single channel system) are run on our processing platforms the P4000 and P5000. The P5000 hosts the configuration server database which holds all system configuration data plus the configuration server application. All other core software modules are distributed over a number of P4000 units.

The key to the Polistream system is the ability to monitor, control and configure large subtitling systems in a simple and efficient way. Users can access the system either on the local network or remotely via a dial-up link or VPN.

- Features and benefits**
- Considerable savings both on cost and rack space
  - Centralised control system for subtitles
  - Remote access available
  - Multiple languages on multiple channels
  - Flexible
  - Easily expandable
  - Multi-format
  - Graphics
  - Reliability

## open subtitling

Open subtitling is a technique where the subtitle text is permanently visible with the broadcast video material. Upon transmission, the broadcaster uses a subtitle character generator to create the subtitle images which are then superimposed over, or burnt into, the outgoing video signal. The viewer does not have the option to turn off the subtitles.

*'Subtitle images are superimposed over or burnt-into, the outgoing video signal'*

### Uses of open subtitling

- To provide a single language (or perhaps a pairing of two languages) translation of broadcast video material across a known geographical area
- To provide subtitles for translated video cassette distribution

## polistreamG3000

The Polistream G3000 is Screen's high quality solution for inserting open subtitles into broadcast quality digital video at standard definition.

### Features and benefits

- Up to full colour depth operation means full broadcast quality.
- Fading of graphics objects
- In and out times against time code
- Two analogue monitor outputs show what exactly is going to air
- Remote software and firmware upgrades via Ethernet
- Ethernet connectivity for simple setup

## polistreamG3500

The G3500 has the same functionality as the G3000 plus:

- A single static logo
- Control via Polistream enables: fade in and out, position control, logo selection and loading
- Reveal controlled via GPI or automation

## polistreamG5000HD

The G5000HD is our solution for inserting HD subtitles and graphics into HD broadcast quality video.

### Features and benefits

- Post-production graphics and subtitle burn-in
- Channel branding and information services
- Insertion and localisation
- HD SDI signal
- Bypass relay

## closed subtitling

Closed subtitling is a technique where the subtitle text is hidden within the video signal and not automatically visible. The viewer can choose whether to display the subtitles or not as required. There are three main types of closed subtitling – DVB/Imitext, Teletext and Line 21.

*'The viewer can choose whether to display the subtitles or not'*

## DVB and Imitext subtitles (A Series)

DVB stands for Digital Video Broadcasting, and this technology relies on the viewer having a suitable digital receiver, either as a standalone set-top box (STB) or built into their TV set. The transmission method may be digital terrestrial (DTT), satellite or cable distribution.

The DVB standard supports two styles of subtitling: bitmapped and Teletext. Subtitles are generated using a similar technique to open subtitling and then formatted as graphics (bitmaps). This data is then transmitted as part of the station's output transport stream to the set-top box decoders. Once a decoder receives the data the subtitle is then re-constructed in the decoder's memory. A user can select whether to display subtitles or not and, if available, which one of several languages. At the appropriate time the decoder will then display the subtitle on-screen.

With DVB and Imitext subtitling, the subtitles are transmitted as bitmapped images, and therefore are not limited to Roman-based characters but can include complex fonts such as Thai and Chinese.

Imitext subtitling is a proprietary system developed by Screen Subtitling Systems and licensed to Scientific-Atlanta.



## polistreamA1000 Series

ASI input

The A1000 provides the Polistream system with an ASI input capability.

This feature may be utilised in transmission and monitoring applications.

- In a standard DVB transmission subtitling role it extracts PCR (Program Clock Reference) timing from the ASI stream as the basis for all timing within the system, and the creation of Presentation Time Stamping (PTS) of outgoing DVB subtitles.
- In a monitoring role, the A1000 can extract selected channels from the ASI stream by PID filtering. The required data is passed over the network to the Polistream MSX monitoring system where the user can monitor combinations of subtitles anywhere there is a network connection.

The A1000 comes complete with a Polistream control driver application that allows full configuration and control either locally or from anywhere on the network.

## polistreamA4000 Series

ASI input and output

The A4000 incorporates all of the features of the A1000 plus the facility to generate an outgoing ASI stream containing subtitle and opportunistic data. The A4000 combines a high-speed DVB compliant ASI stream input and output with the ability to multiplex multiple data sources received over a 100BaseT Ethernet link.

Opportunistic data allows operators to maximise the usage of available bandwidth through the management of private data alongside DVB subtitles. This innovative approach ensures that bandwidth allocation can be fully optimised at all times whilst ensuring the secure delivery of subtitles.

The A4000 comes complete with a Polistream control driver application that allows full configuration and control either locally or from anywhere on the network.

### Features and benefits

- **Multiple channel and language subtitle delivery**
- **PCR recovery to provide timing reference**
- **Subtitle and PSI data recovery for monitoring with Polistream MSX**
- **Can support any number of channels and languages on one or two ASI streams**

The individual characters that make up a Teletext subtitle are represented by single codes which are then transmitted to the receiving equipment.

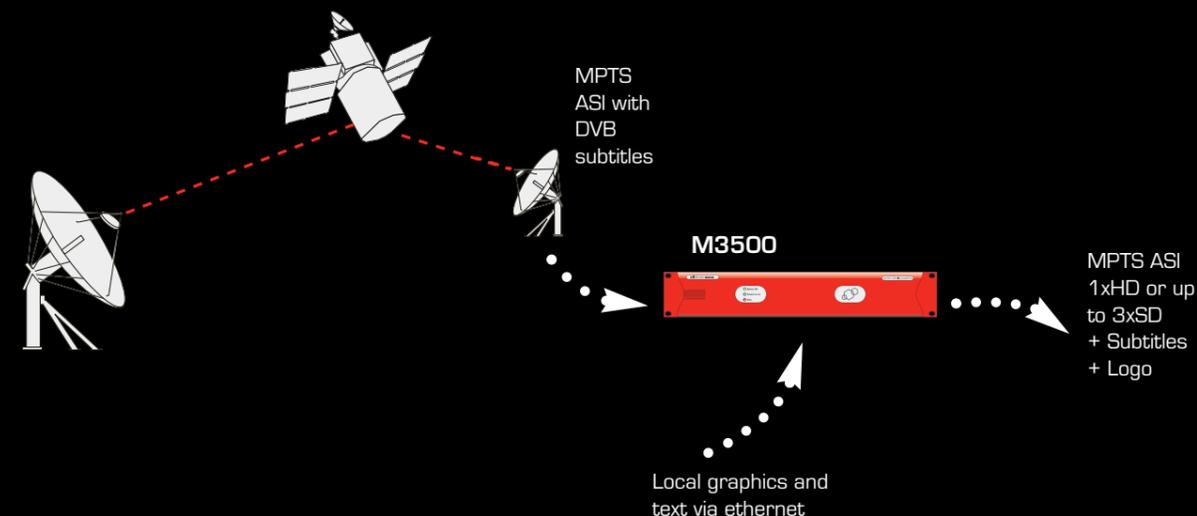
The Teletext receiver then looks up the codes in an on-board table and displays the required characters on screen.

## Teletext

Teletext subtitling involves adding a stream of data representing the subtitle characters into the VBI area of the broadcast video signal. Suitably equipped TV sets or receivers can be set to decode the data and display the subtitles on screen.

Teletext subtitling should not be confused with the closed captioning system used in several countries using the NTSC video standard including the U.S.A.

## M-Series MPEG graphics insertion



## polistreamT3000

teletext/data inserter

The T3000 VBI data inserter is our Teletext subtitling solution and can insert teletext subtitles for up to 16 different languages.

### Features and benefits

- **Direct in-line SDI VBI insertion**
- **Power fail SDI input bypass relay**
- **All ancillary and VBI data (eg embedded audio) from the SDI input is passed transparently through the T3000**
- **Remote configuration and unit upgrade available**

## polistream M-SERIES

direct MPEG subtitle insertion

The Polistream M-Series is our innovative solution for subtitling and localised contribution channel branding in MPEG for HD as well as SD. We use the very latest MPEG processing techniques to modify multiple MPEG2 video streams in real time without decoding and recoding the whole picture.

Adding the data to the MPEG stream in real time provides considerable savings in cost and rack space and is therefore by far the best solution for those needing to transmit MPEG subtitles and other localised data.

### Features and benefits

- **Handles HD as well as SD**
- **MPEG domain processing – retains picture quality**
- **No encoders required**
- **Fewer decoders required**
- **Can insert subtitles and static logos**
- **Supports MPTS – Modification of multiple video streams in one transport stream**
- **Option to trans-rate MPEG stream to lower bit rates on the fly**