

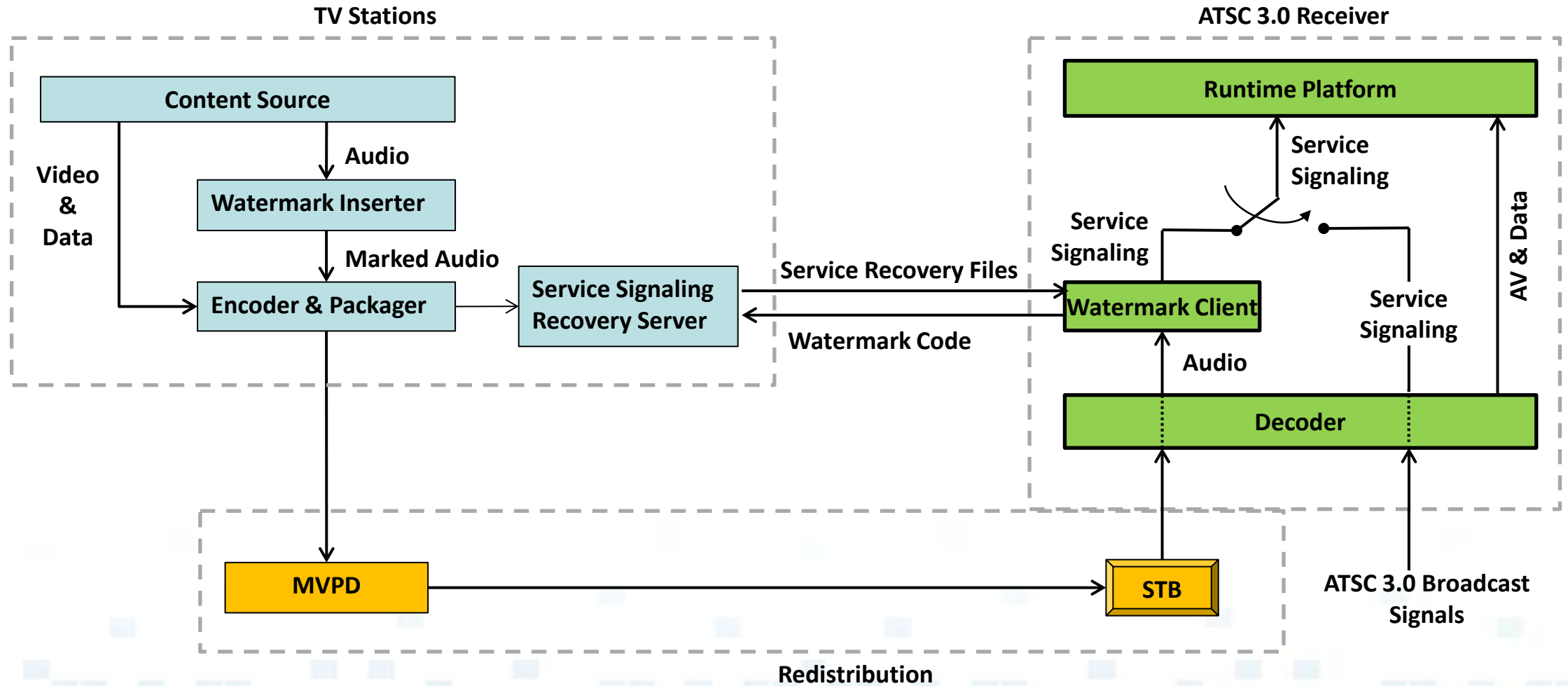
EIDR Use Case:

Verance Public Watermark and EIDR to Enable Broadcast Services over Redistribution Networks

January 22, 2015



- ⇒ Service Signaling is the metadata included in a ATSC terrestrial broadcast that enables interactive applications, ads insertion and other services.
- ⇒ ATSC 3.0 Receivers do not receive Service Signaling over redistribution networks (e.g., connected to set-top boxes from MVPD via HDMI)
- ⇒ ATSC is in the process to select and standardize a watermark-based solution to identify content and content source that is being viewed and the current time point in the content, and then allow the ATSC Receiver to recover the Service Signaling via an Internet connection
- ⇒ Verance has submitted VP1, an audio watermark based solution, to ATSC for standardization



⇒ Mapping Watermark Code to EIDR, and use EIDR as a program/service identifier in the entire broadcast chain

- Verance's VP1 solution includes the protocols to translate a Watermark Code directly to the address of a Service Signaling Recovery Server, and furthermore to a Service Recovery File on the Service Signaling Recovery Server
- Each Service Recovery File contain an EIDR as program/service identifier to the program/service being viewed and from which the Watermark Code was extracted
- Watermark code is repeated every 1.5 seconds and only one detection is needed to recover the EIDR
- The current time point in the content identified by Watermark Code is determined with frame accuracy

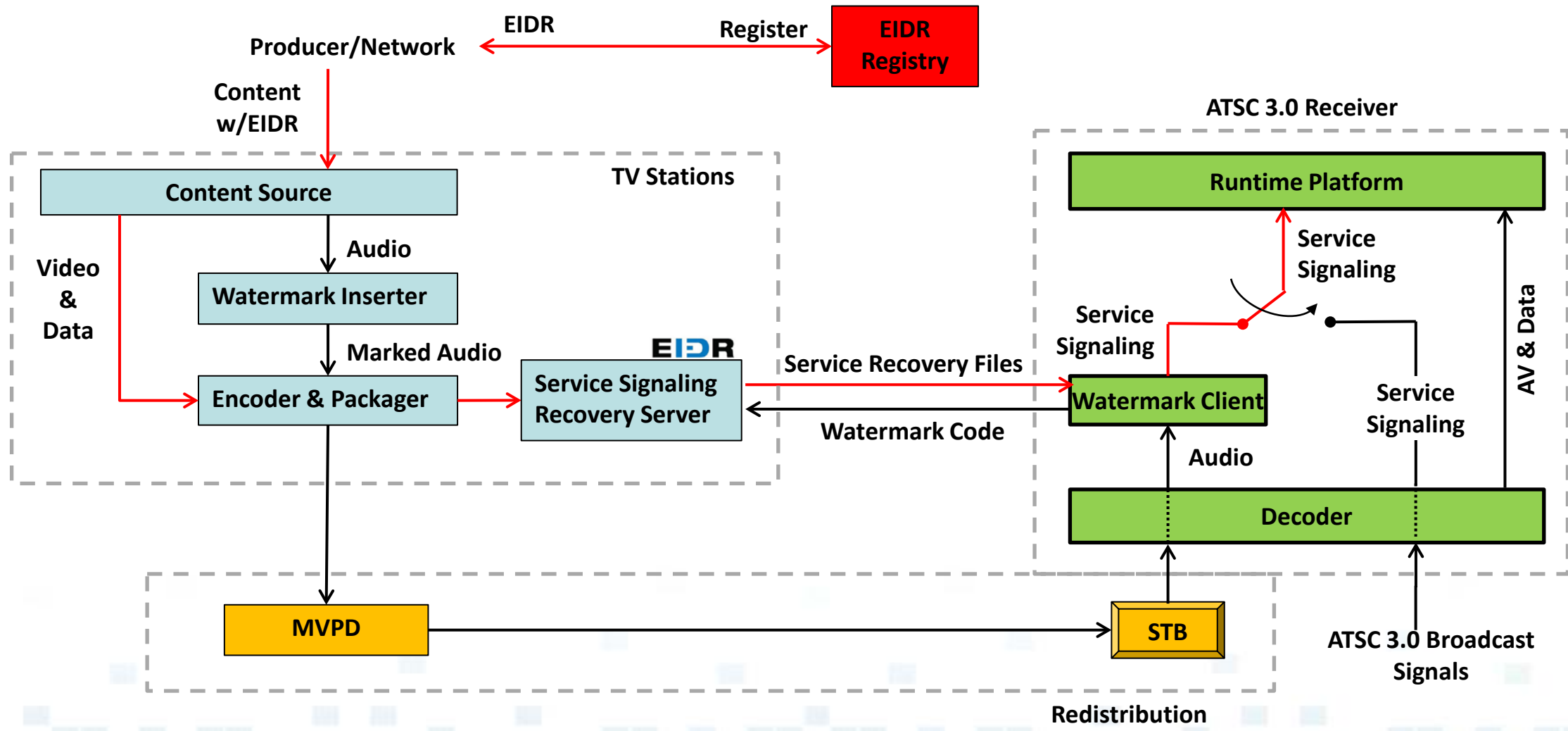
⇒ ATSC 3.0 Receiver

- Extract watermark code from audio (from redistribution interface)
- Use the watermark code to query Service Signaling Recovery Server to receive a Service Recovery File
- Obtain the EIDR in the Service Recovery File as program/service identifier (e.g. to access Watchwith CMS)

⇒ TV Stations' Encoder/Packager

- Multiplex Service Signaling into the ATSC broadcast streams; and at the same time
- Store watermark code and Service Signaling as Service Recovery Files at Service Signaling Recovery Server

EIDR Recovery in Verance VP1 System Architecture



— Data flow with EIDR