



**Data Casting**

**Using ATSC 1.0 and/or**

**ATSC3.0**

**Broadcast**

**UniSoft Corporation**

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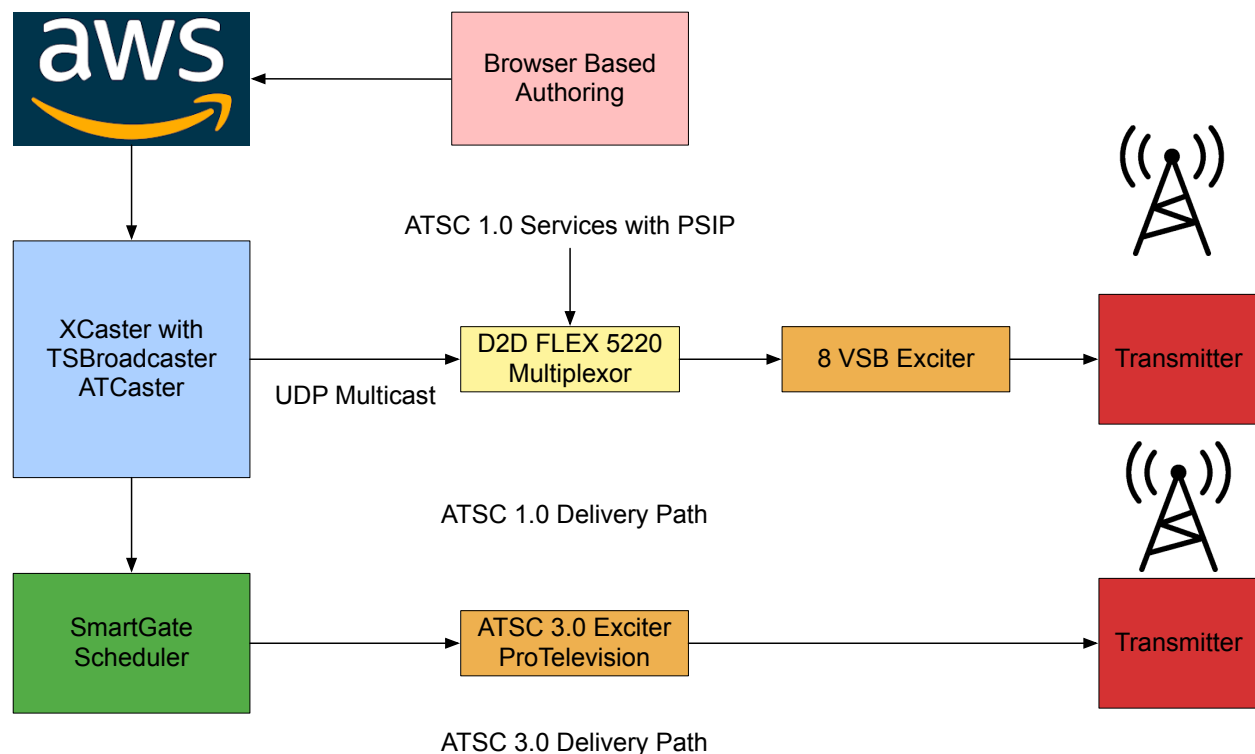
## 1. Overview

UniSoft offers the XCaster datacasting system which can deliver content either via ATSC 1.0 or 3.0. Transmission to each standard may occur either simultaneously or individually.

In addition, UniSoft Corporation offers a variety of ATSC 3.0 delivery components, software and integration services.

### 1.1. XCaster Configuration Summary

The diagram below shows a typical XCaster configuration, with dual delivery paths:

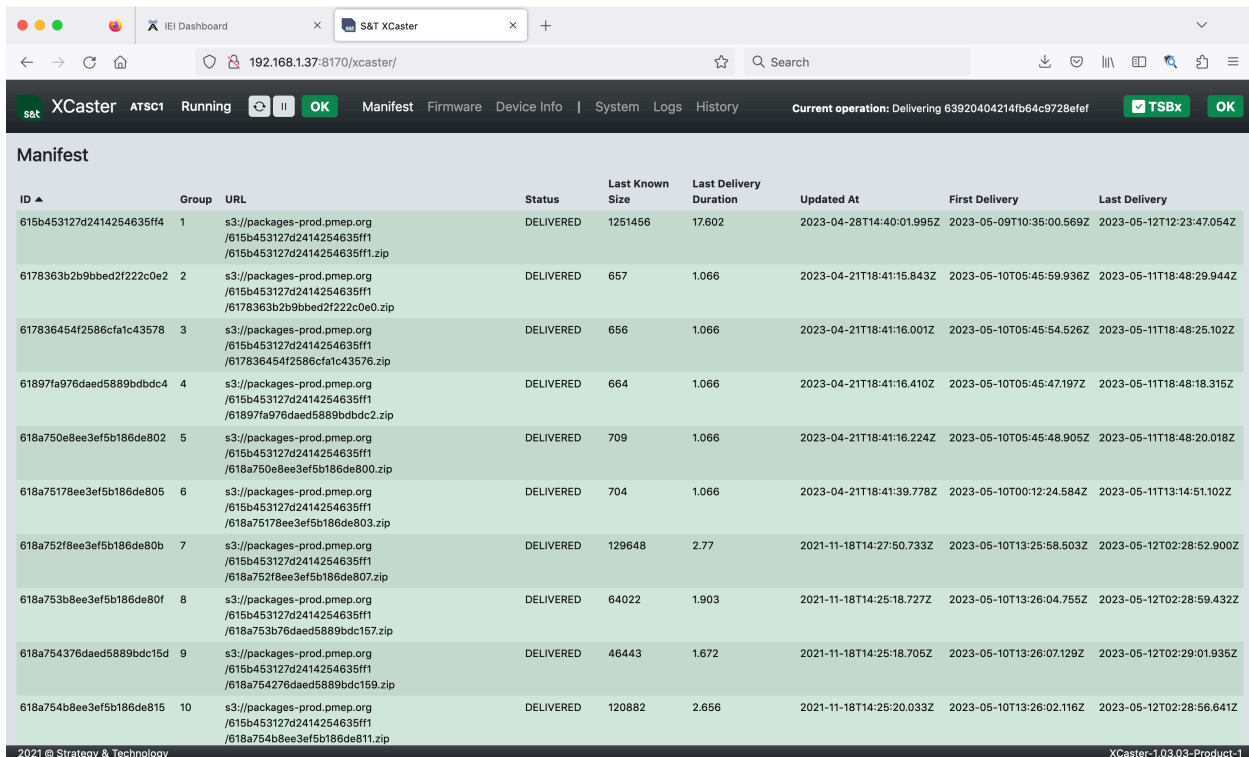


## 2. XCaster

XCaster is bundled with two software packages TSBroadcaster and ATCaster. TSBroadcaster encodes data into a DSM-CC data carousel for transmission over ATSC 1.0. ATCaster delivers data via a NRT within a 3.0 broadcast.

XCaster is particularly suitable for transmission of educational material for remote learning applications. There are countless other applications too including digital signage ads, data to medical kiosks, emergency alerts or even firmware upgrades for a variety of mobile devices.

XCaster can also deliver standalone web sites to locations which do not have a broadband connection.

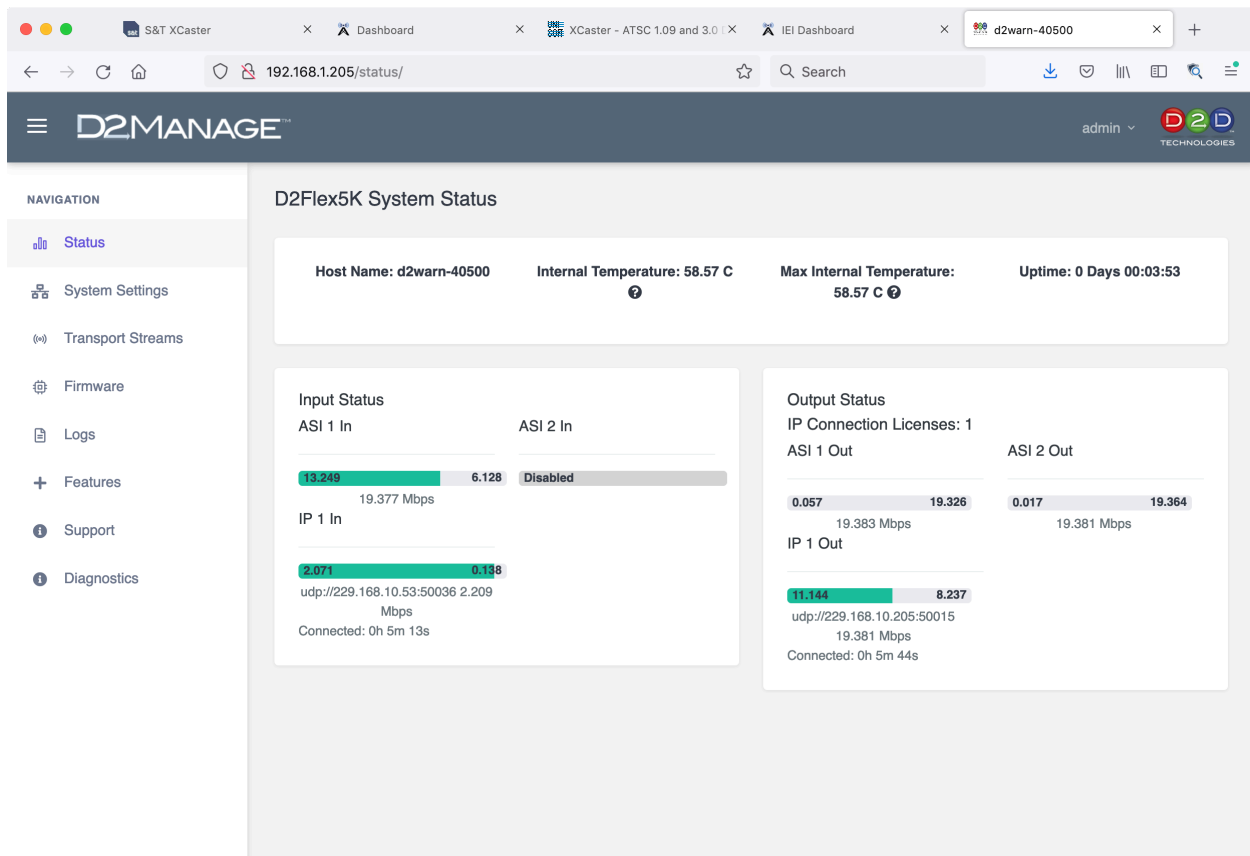


The screenshot shows the S&T XCaster web interface. The browser address bar displays '192.168.1.37:8170/xcaster/'. The interface includes a navigation bar with tabs for 'Manifest', 'Firmware', 'Device Info', 'System', 'Logs', and 'History'. The 'Manifest' tab is active, showing a table of data. The table has columns for ID, Group, URL, Status, Last Known Size, Last Delivery Duration, Updated At, First Delivery, and Last Delivery. The table contains 10 rows of data, all with a status of 'DELIVERED'. The footer of the interface shows '2021 © Strategy & Technology' and 'XCaster-1.03.03-Product-1'.

ID	Group	URL	Status	Last Known Size	Last Delivery Duration	Updated At	First Delivery	Last Delivery
615b453127d2414254635ff4	1	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/615b453127d2414254635ff1.zip	DELIVERED	1251456	17.602	2023-04-28T14:40:01.995Z	2023-05-09T10:35:00.569Z	2023-05-12T12:23:47.054Z
6178363b2b9bbd2f222c0e2	2	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/6178363b2b9bbd2f222c0e0.zip	DELIVERED	657	1.066	2023-04-21T18:41:15.843Z	2023-05-10T05:45:59.936Z	2023-05-11T18:48:29.944Z
617836454f2586cfa1c43578	3	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/617836454f2586cfa1c43576.zip	DELIVERED	656	1.066	2023-04-21T18:41:16.001Z	2023-05-10T05:45:54.526Z	2023-05-11T18:48:25.102Z
61897fa976daed5889bdbc4	4	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/61897fa976daed5889bdbc2.zip	DELIVERED	664	1.066	2023-04-21T18:41:16.410Z	2023-05-10T05:45:47.197Z	2023-05-11T18:48:18.315Z
618a750e8ee3ef5b186de802	5	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/618a750e8ee3ef5b186de800.zip	DELIVERED	709	1.066	2023-04-21T18:41:16.224Z	2023-05-10T05:45:48.905Z	2023-05-11T18:48:20.018Z
618a75178ee3ef5b186de805	6	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/618a75178ee3ef5b186de803.zip	DELIVERED	704	1.066	2023-04-21T18:41:39.778Z	2023-05-10T00:12:24.584Z	2023-05-11T13:14:51.102Z
618a752f8ee3ef5b186de80b	7	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/618a752f8ee3ef5b186de807.zip	DELIVERED	129648	2.77	2021-11-18T14:27:50.733Z	2023-05-10T13:25:58.503Z	2023-05-12T02:28:52.900Z
618a753b8ee3ef5b186de80f	8	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/618a753b76daed5889bdc157.zip	DELIVERED	64022	1.903	2021-11-18T14:25:18.727Z	2023-05-10T13:26:04.755Z	2023-05-12T02:28:59.432Z
618a754376daed5889bdc15d	9	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/618a754276daed5889bdc159.zip	DELIVERED	46443	1.672	2021-11-18T14:25:18.705Z	2023-05-10T13:26:07.129Z	2023-05-12T02:29:01.935Z
618a754b8ee3ef5b186de815	10	s3://packages-prod.pmpc.org/615b453127d2414254635ff1/618a754b8ee3ef5b186de811.zip	DELIVERED	120882	2.656	2021-11-18T14:25:20.033Z	2023-05-10T13:26:02.116Z	2023-05-12T02:28:56.641Z

### 3. D2D Multiplexor

The D2Flex5K device provides a cost effective method of adding a XCaster data service to your existing ATSC 1.0 services:



## 4. ATSC 3.0 Multiplexing

In the vase of ATSC 3.0 transmission, the ATCaster generated EDUC service is multiplexed in using the Scheduler. See below and example using the Enensys SmartGate.

The screenshot displays the SmartGate ATSC3 interface, which is used for configuring ATSC 3.0 multiplexing. The interface is divided into two main sections: LLS scanning and LLS generation.

**LLS scanning:** This section allows users to select LLS(s), table(s), and service(s) to map. It shows two sources: 10.5.120.103 (Group ID 24) and 10.5.120.51 (Group ID 9). The first source has four services: KSBBDT1 (Service ID 2), Demo5 (Service ID 3), TitanTV (Service ID 99), and UniSft1 (Service ID 1). The second source has five services: TitanTV (Service ID 99), USC332 (Service ID 2), USC331 (Service ID 1), USC333 (Service ID 3), and EDUC (Service ID 4). The EDUC service is highlighted.

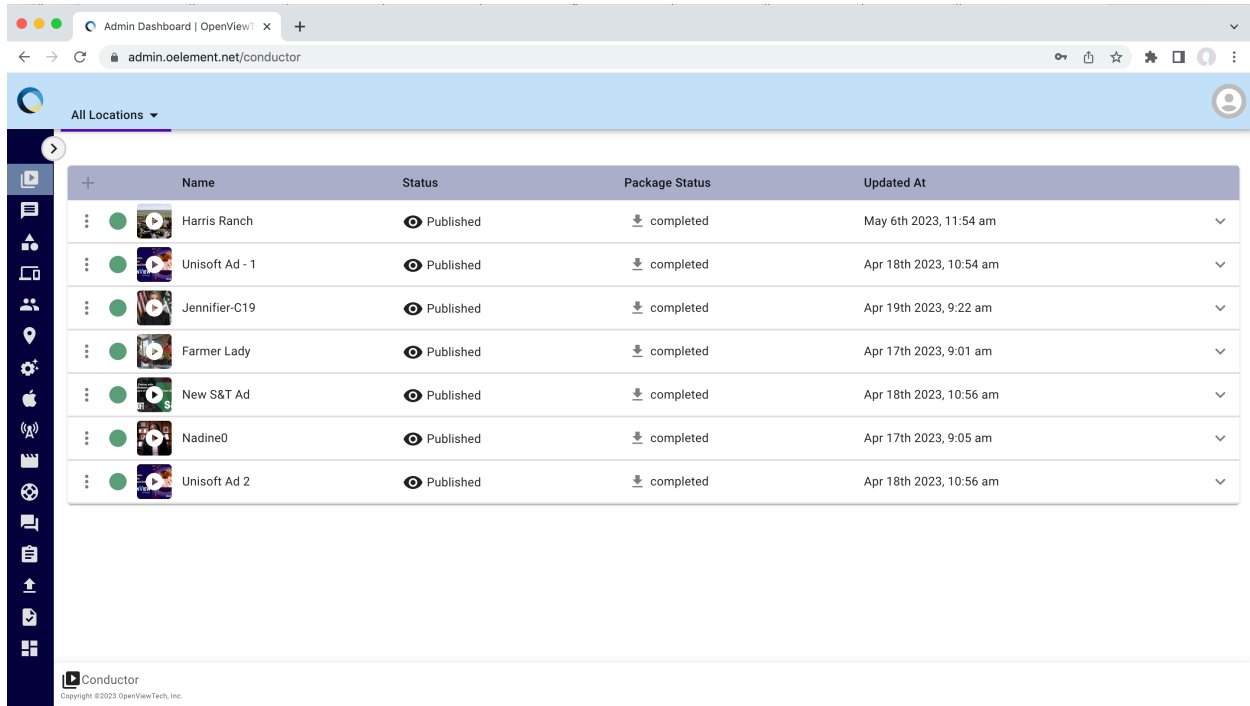
**LLS generation:** This section shows the LLS generation process. It includes a table with the following data:

LLS Name	Source	Group ID
LLS 100	10.5.120.28	100

The table also includes a column for SLT (Service List Table) and an ADD SERVICE button. Below the table, there is a section for LLS configuration, including Identification and Network details. The Network section shows the Group ID (100), Source address (10.5.120.28), and Source port (4937).

## 5. Creating Content

Content is created using a web based authoring environment which pushes the data to AWS:



	Name	Status	Package Status	Updated At
...	Harris Ranch	Published	completed	May 6th 2023, 11:54 am
...	Unisoft Ad - 1	Published	completed	Apr 18th 2023, 10:54 am
...	Jennifer-C19	Published	completed	Apr 19th 2023, 9:22 am
...	Farmer Lady	Published	completed	Apr 17th 2023, 9:01 am
...	New S&T Ad	Published	completed	Apr 18th 2023, 10:56 am
...	Nadine0	Published	completed	Apr 17th 2023, 9:05 am
...	Unisoft Ad 2	Published	completed	Apr 18th 2023, 10:56 am

Conductor  
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## 6. HDHomeRoom Receiver

The HDHomeRoom Receiver from SiliconDust includes a status page which allows users to set the channel for the data service.

The device will tune to either an ATSC 1.0 or 3.0 service and acquire the data from the appropriate delivery mechanism.

Model Number	HDAT-128GB
Firmware Version	20210902
Serial Number	40000031

HDHomeRoom™ Status	
Operational Status	healthy
Tuner Channel	15
Tuner Lock	8vsb
Tuner Data	yes
Signal Strength	100%
Signal Quality	79%
Symbol Quality	100%
Manifest Rx	11867
Available Files	0/44
Total Space	125.8GB
Used Space	0.1GB
Free Space	125.7GB

HDHomeRoom™ Configuration	
<input type="text" value="15"/>	<input type="button" value="Set Channel"/>

## 7. UniSoft Classroom Gateway

The Classroom Gateway is more suitable for being shared by multiple students who can connect via WiFi. The configuration includes:

- Intel NUC PC running Ubuntu Linux.
- Airwavz Red Zone Receiver.
- UniSoft sendmc multicast subsystem (for ATSC 1.0 reception).
- Omni-directional TV antenna.

