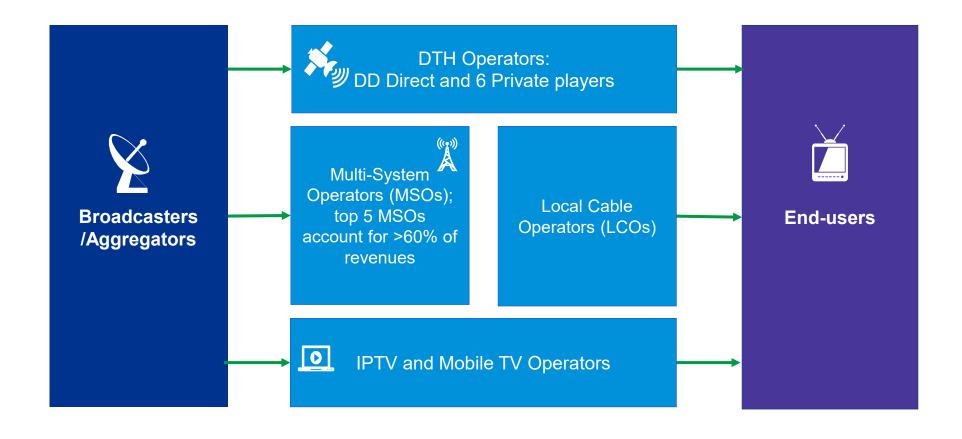


Digital Addressable Systems Audits



August 2025

Broadcasting Infrastructure

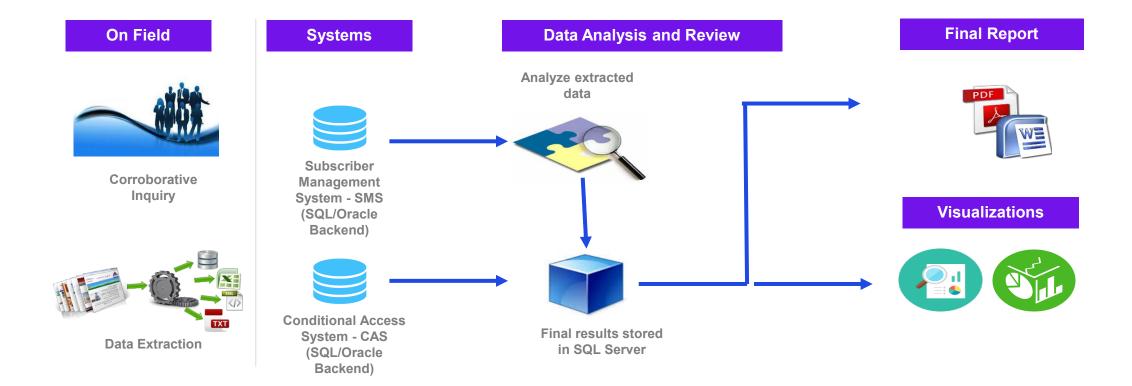


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Our Approach & Methodology-Overview





Our Approach & Methodology-Overview



Key Activities

Project kick-off & Planning

- Primary information gathering -Zone of Operation, Equipment's used in their Control Room including Encoders, Multiplexers, PSI/SI, Conditional Access System and Subscriber Management System.
- Total number of instances installed for Conditional Access System and Subscriber Management System.
- · Versions used for CAS & SMS
- Reports available in system for analysis and format in which it is extracted.
- Share 'Initial data requirement', request to the MSO, considering all the data required for the audit.

DAS Headend validation

- Conduct technical review of the systems – CAS and SMS in line with TRAI mandates
- Validating adherence to TRAI mandates
- Testing Piracy related controls in STB.
- Testing PVR related controls.
- Identify gaps and deviations if any.
- Data extraction.

Data Analytics

- Reconciliation of CAS vs SMS Data
- Verification of Samples collected from field in CAS & SMS, as applicable**
- Review of package activation / deactivation log.

Reporting

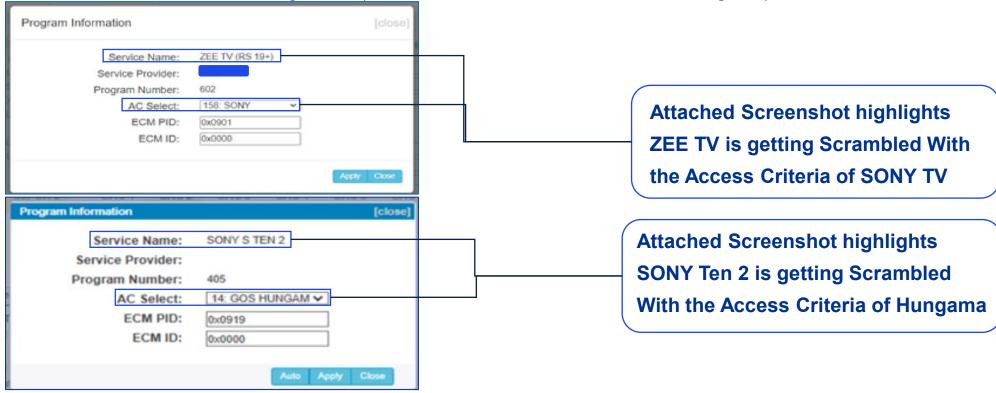
- Prepare and present draft report on gaps / pattern identified.
- Issue report to DPO.

**Samples from the field shall be shared by the broadcaster



Step 1: Detailed headend Walkthrough

- Broadcaster IRD validation.
- Multiplexer/Scrambler/QAM Configuration validation.
- 4.5) Check MUX configuration to validate number of Transport Streams ("TS") configured with SID, scrambling status of each SID and ECM and EMM configuration (MUX-TS Stream-No. of ECM & EMM configured)





Step 1: Detailed headend Walkthrough

TS Recording













Step 1: Detailed headend Walkthrough

Validation of CAS and SMS servers physical instances and IP address.

Step 2: Simulation Testing on all types of STB's deployed by DPO.

Simulation Testing at least on 1 STB of each model deployed in DPO network as per the procedure to be followed for inspection of Schedule III of Interconnection Regulations 2017 Compliance and subsequent amendments if any.

Step 3: Data extraction from all the CAS and SMS servers disclosed by DPO.

1. Improper audit trail: Lack of logs for STB provisioning, package modifications, Channel Renaming.

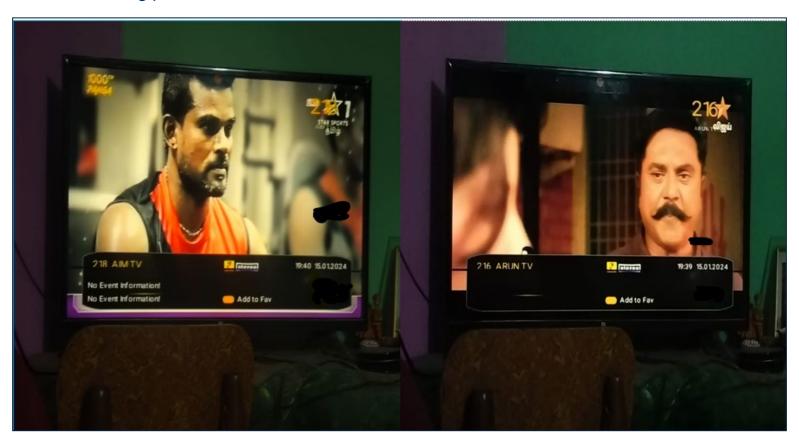
PNAME	PRODUCT_ID NAN 🔻	SERVICE_NAME	STATU: 🔻	STATUS_TIME 🔻	PRODUCT_TYI 🔻
Star Sports2 Hindi HD	228	Star Sports2 Hindi HD	Added	4/27/2022 14:48	ALACARTE
Star Sports2 Hindi HD	228	Star Sports2 Hindi HD	Removed	3/21/2025 7:31	ALACARTE
Star Sports2 Hindi HD	228	Star Sports2 Hindi HD	Added	3/21/2025 7:31	ALACARTE

Star Sports 2 Hindi HD was launched on March 15, 2025. However, the image above clearly shows that changes made today are also affecting historical data.



Step 3: Data extraction from all the CAS and SMS servers disclosed by DPO.

Risk of Transmitting paid Channels as FTA.





Step 3: Data extraction from all the CAS and SMS servers disclosed by DPO.

- 1. Data Integrity and Accuracy Issues
- a) Incomplete subscriber data: Many systems lack accurate subscriber-level data.
- b) Non-compliant CAS & SMS systems: Some Conditional Access Systems (CAS) or Subscriber Management Systems (SMS) don't meet TRAI's data reporting standards.

```
Total Active VC Count: 11232
```

Create Time:2025-07-29 16:14:47 Report Time:2025-07-29 16:14:48 Query Deadline:2025-07-07 23:59:59

Total Active VC Count: 17963

Create Time:2025-07-30 17:48:13 Report Time:2025-07-30 17:48:13 Query Deadline:2025-07-07 23:59:59

17.693 - 11.232 = 6.731.

Snapshot 1 highlights data extracted on 29th July 2025 for total active subscribers on 7th July 2025 which is 11,232.

On 30th July 2025 same data was extracted From the same system for the same date, However additional 6,731 subscriber were Available in the report.



CATV/HITS/DTH DAS Audit

Step 4: Analysing the Data extracted during the DAS audit field activity.

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Step 5: Sharing Draft report with DPO for their comments on the observations highlighted in the Draft report.

Step 6: Sharing final report with DPO if the audit is caused by DPO and if it's a broadcaster caused audit releasing the final report to DPO and Broadcaster.



IPTV DAS Audit

Issues faced during IPTV Audits.

- **Unavailability of Audit Manual.**
- **Definition of middleware.**
- 3. **Definition of Forensic Watermarking.**



Thank You

