HDM TR-143 – EVOLUTION OF FIXED BROADBAND PERFORMANCE MANAGEMENT

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ABSTRACT

Present an overview of the broadband service performance management solution, developed and deployed at Oi, using the HDM (Home Device Manager) platform and based on TR-143 protocol.

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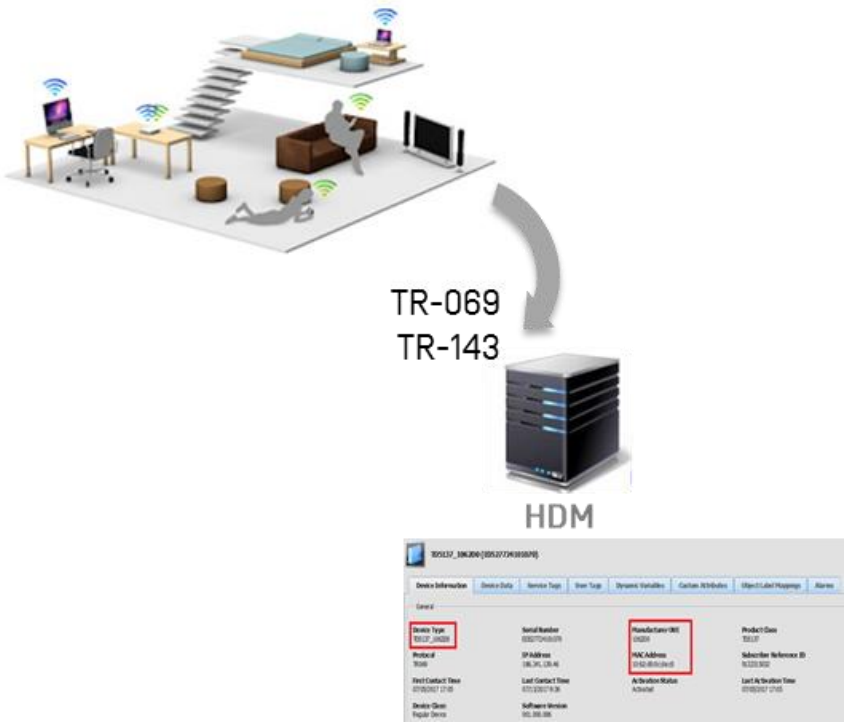
OI USES HDM TO MANAGE HOME DEVICES (TR-069) AND THE BROADBAND SERVICE PERFORMANCE (TR-143).



BROADBAND SERVICE PERFORMANCE MODEL

COVERAGE

- Modems compatible with TR-143;
- ~75% of DSLAMs;
- 17 Servers (to perform tests).

MEASURES (STATISTICS DATA)

- Packet Loss;
- Latency;
- Jitter;
- Speed (up & down) – Average and Instantaneous;
- Availability.

BROADBAND SERVICE PERFORMANCE (TR-143) - TEST FLOW

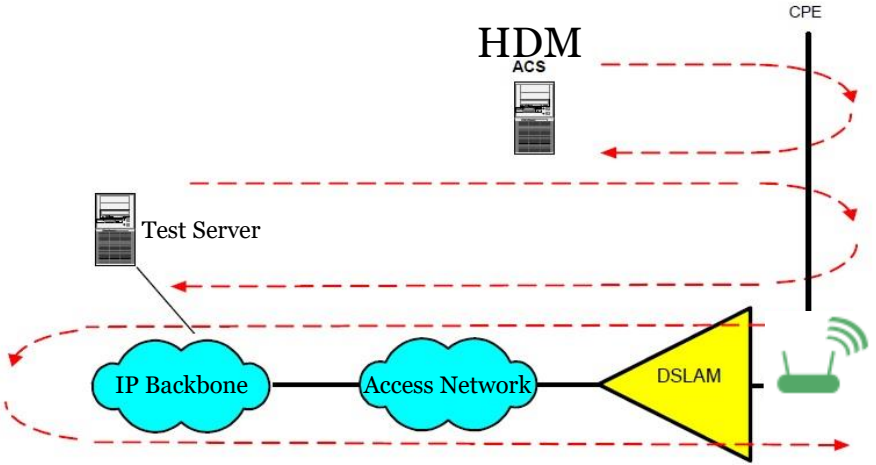
1. HDM platform queries the CPE´s counters, before test goes ahead;

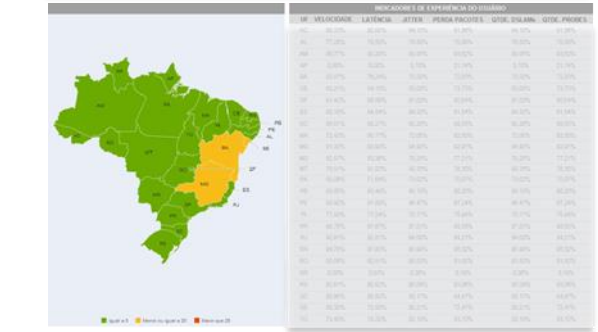
2. Based on CPE ping tests, HDM identifies lower latency server and informs its URL to the CPE;

3. CPE does speed tests and reports the results to the HDM;

4. HDM calculates the values of Latency, Jitter, Packet Loss, Instantaneous Speed, Download and Upload speeds;

5. HDM stores the results in a database and provides interface for consultation.





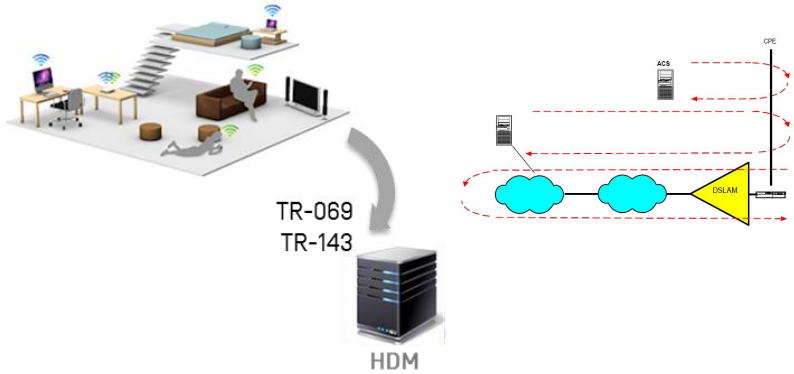
ILLUSTRATIVE GRAPHIC MODEL

AT THIS MOMENT, OI DEPLOYED HDM TR-143 AS THE BROADBAND QUALITY MODEL TO SUPPORT BRAZILIAN REGULATORY AGENCY (ANATEL) RULES.

CURRENT MODEL

- Requires volunteers and installation of probes in the subscribers home;
- Reduced number of probes (max. amount: 33 per State);
- Low number of samples (do not reflect network quality);
- Reduced number of test servers (9) do not reflect Brazilian geographic distribution;
- Additional OpEx

PROPOSED MODEL



- Do not requires volunteers - Easier to include new measurement points;
- The model uses installed modems, compatible with TR-143;
- 17 Servers (to perform tests) distributed over the country;
- Allows variation of samples and dynamic allocation of modems;
- Low costs infrastructure for O&M (OpEx);

BROADBAND SERVICE PERFORMANCE (TR-143) – PROPOSED MODEL NUMBERS

- Supports from 120 to 180 modems (probes) by region (F*ederal Unit*) **(5 times than the current model – 33 probes per Federal Unit)**
- Represents ~1,477,440 daily tests, according Anatel specifications.

Daily tests (total)	**1,477,440**
Down / Upload speed tests (1/1 h).	77,760
Latency, Jitter and Packet Loss (10/10 min).	466,560
Availability (5/5 min)	933,120

Note: All the tests models are certified by CPqD *(Centro de Pesquisa e Desenvolvimento em Telecomunicações)*

CONCLUSION

Considering the points presented on previous slides, Oi understands that the proposed TR-143 model brings important benefits as :

1. Greater flexibility in the process of data delivered to Anatel;
2. Easy to include new modems (new measurement points);
3. Focus on low performance areas;
4. Low cost infrastructure for O&M (Opex);
5. Increase customer satisfaction and reduction of about 20% in call center calls;
6. Nationwide solution (more samples and tests servers reflect network quality);

THANK YOU!