

Encode / Decode Latency Measurements

Vendor	Encoder Vendor generating transport stream.
Vendor	Decoder Vendor decoding transport stream.
	No value obtained see notes below table.
TS#	Transport Stream as defined in the accompanying documents.
#	Value = The total encode/decode system latency value measured .

How to Interpret Results

Explanation of Results: TS2 refers to the Transport Stream 2. The parameters of TS2 may be found in the accompanying documents. TS2 was generated by the HD MPEG-4 encoders listed in the top row. The test results show the total latency result when the specified TS was decoded by the HD MPEG-4 decoders in the first column. No number in a box indicates no value generated. A note at the bottom of the test results may explain the result where necessary. Four charts have been produced to assist in visualizing the results.

Test Process

- 1) A special HDS DI signal generated by a ProBel Vistek VALID generator has the audio de-embedded.
- 2) The VALID signal is fed via HDS DI to each vendor's encoder producing the ASI transport stream.
- 3) The ASI signal is in turn fed to each decoder.
- 4) The decoder HDS DI output then has the original source audio (de-embedded in Step 1) re-embedded on the decoders return HDS DI signal.
- 5) The VALID test pattern/audio is then read by the Vistek VALID reader.
- 6) The latency value between the processed video and the unprocessed audio is then recorded.

LATENCY 38Mbps HighQ-Standard	Adtec	Ateme	Ericsson	Harris	IDC	NTT
Transport Stream 4:2:0, MPEG2 - 4Ch.	TS2 Y	TS2 Y	TS2 Y	TS2 Y	TS2 Y	TS2 Y
Adtec	894	1858	1823	3446	3688	929
Ateme	936	1884	1998	3620	3863	971
Ericsson		1925	1925	3556	3790	1024
Harris	1289	2461	2268	4271	4539	1335
IDC		1719	1721	3317	3558	
NTT	911	1853	1690	3312	3731	795

Notes

Testing completed October 4th 2011

Equipment setup minus the encode decode equipment has +6ms end-end latency due to HD-SDI demux / remux process

Adtec to Ericsson video was retested live Oct 5th and passed subjective tests, latency value not retested.

Adtec to IDC video was retested live Oct 5th and has blocking preventing measurement

NTT to IDC video was retested live Oct 5th and passed subjective tests, latency value not retested.

LATENCY 20Mbps MidQ-Standard	Adtec	Ateme	Ericsson	Harris	IDC	NTT
Transport Stream 4:2:0, MPEG2 - 4Ch.	TS11 Y	TS11 Y	TS11 Y	TS11 Y	TS11 Y	TS11 Y
Adtec	894	1226	1789	3433	1912	929
Ateme	937	1268	1964	3609	2084	971
Ericsson	981	1315	1882	3546	1989	1015
Harris	1282	1396	2253	4260	2192	1304
IDC	793	1125	1664	3334	1806	802
NTT	761	1196	1755	3300	1778	795

Notes

Testing completed October 4th 2011

Equipment setup minus the encode decode equipment has +6ms end-end latency due to HD-SDI demux / remux process

LATENCY 10.3 Mbps SNG-Low	Adtec	Ateme	Ericsson	Harris	IDC	NTT
Transport Stream 4:2:0, MPEG2 - 4Ch.	TS17 Y	TS17 Y	TS17 Y	TS17 Y	TS17 Y	TS17 Y
Adtec	761	528	1998	3484	2224	496
Ateme	742	513	2129	3615	2288	477
Ericsson	871	639	2105	3589	2338	607
Harris	1138	522	2873	4325	3073	575
IDC	650	417	1894	3375	2121	383
NTT	643	509	1881	3366	2107	378

Notes

Testing completed October 4th 2011

Equipment setup minus the encode decode equipment has +6ms end-end latency due to HD-SDI demux / remux process

LATENCY 20Mbps Mid-Q Lowest	Adtec	Ateme	Ericsson	Harris	IDC	NTT
Transport Stream 4:2:0, MPEG2 - 4Ch.	TS22 Y	TS22 Y	TS22 Y	TS22 Y	TS22 Y	TS22 Y
Adtec	427	473	477	1699	1942	412
Ateme	470	315	315	1872	2114	454
Ericsson	320	355	356	1590	1824	299
Harris	438	478	528	1928	2233	
IDC	302	370	370	1597	1822	311
NTT	393	440	443	1665	1909	278

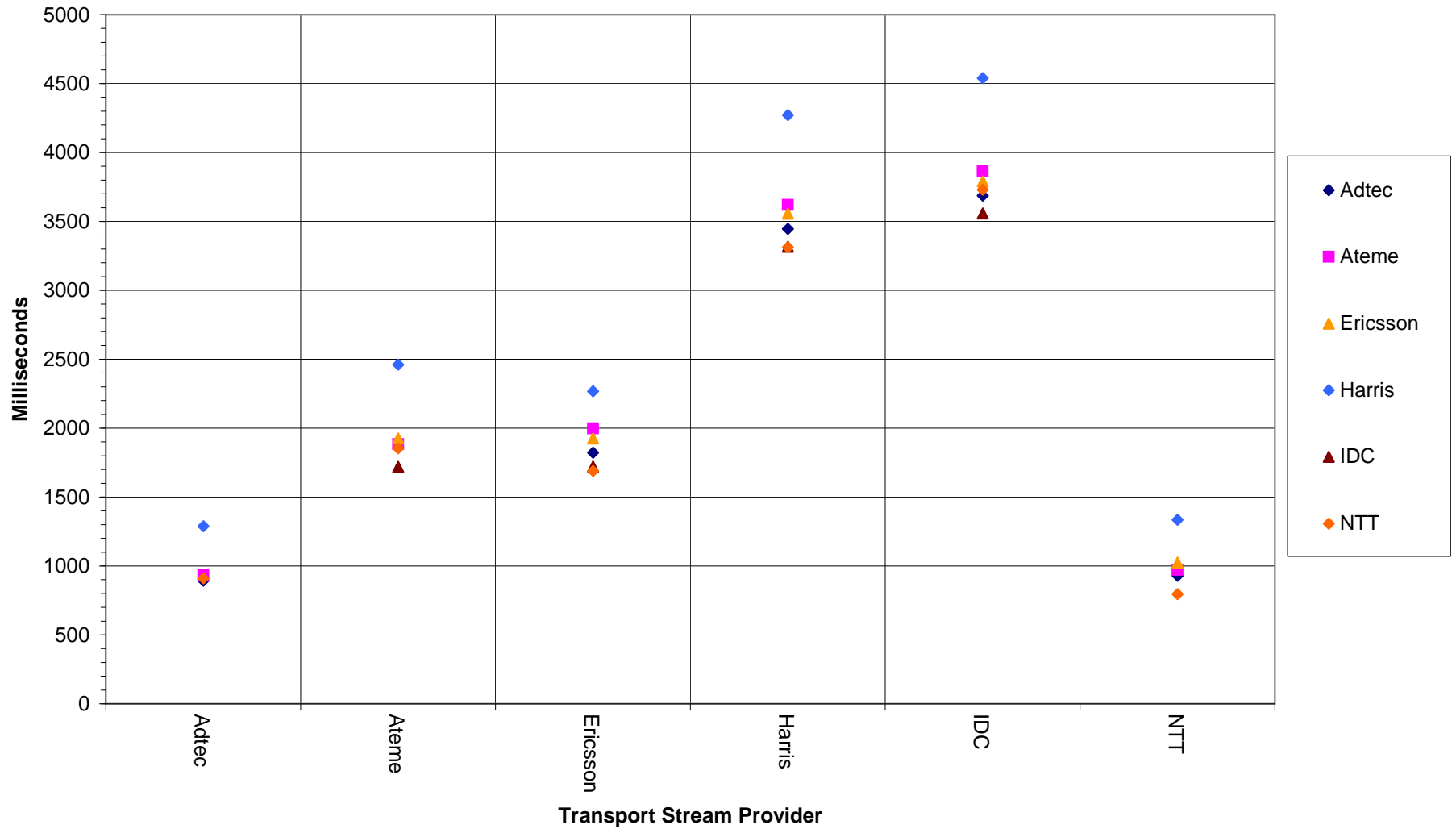
Notes

Testing completed October 4th 2011

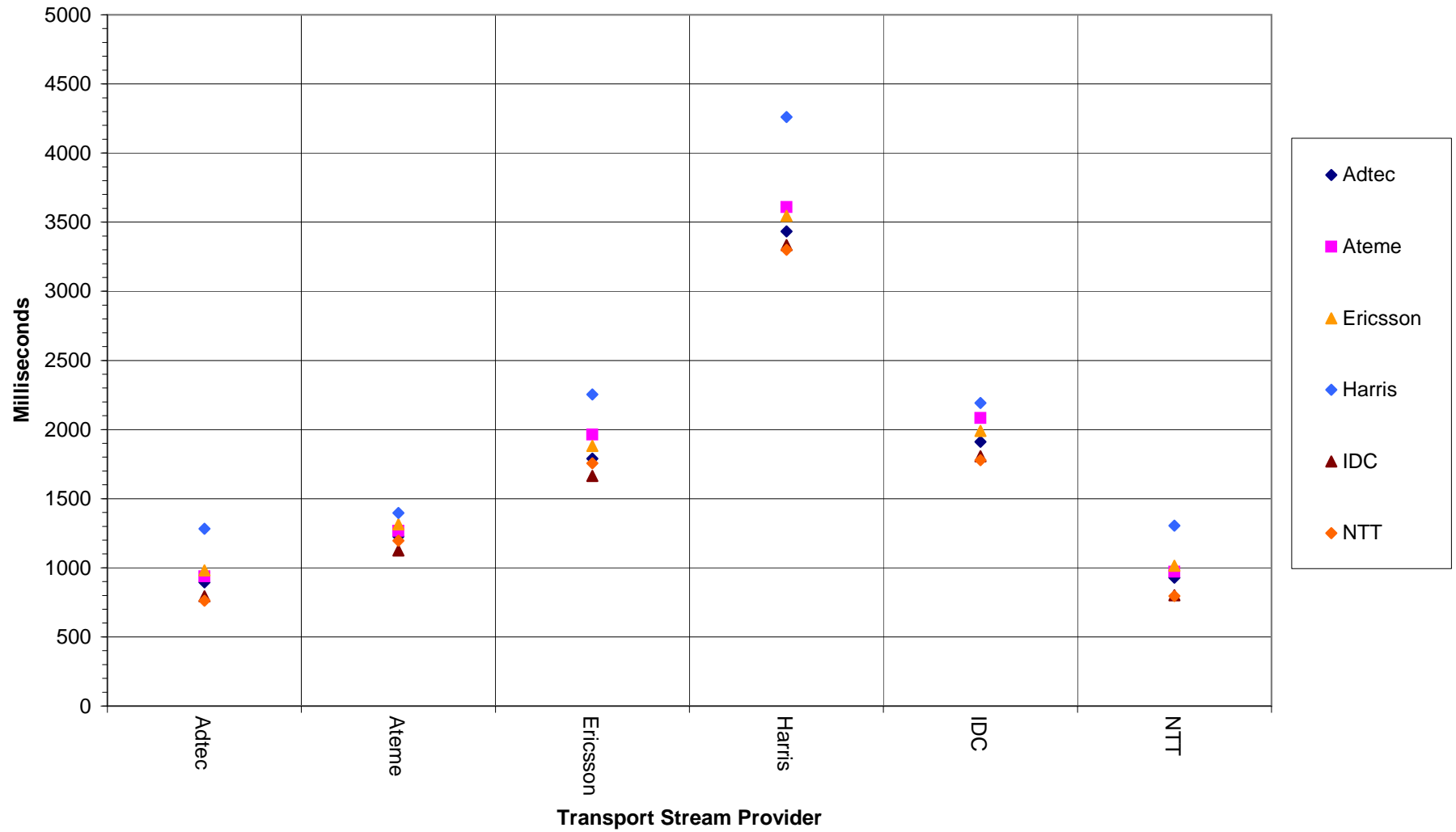
Equipment setup minus the encode decode equipment has +6ms end-end latency due to HD-SDI demux / remux process

Harris decoder has no output for "P only" stream from NTT

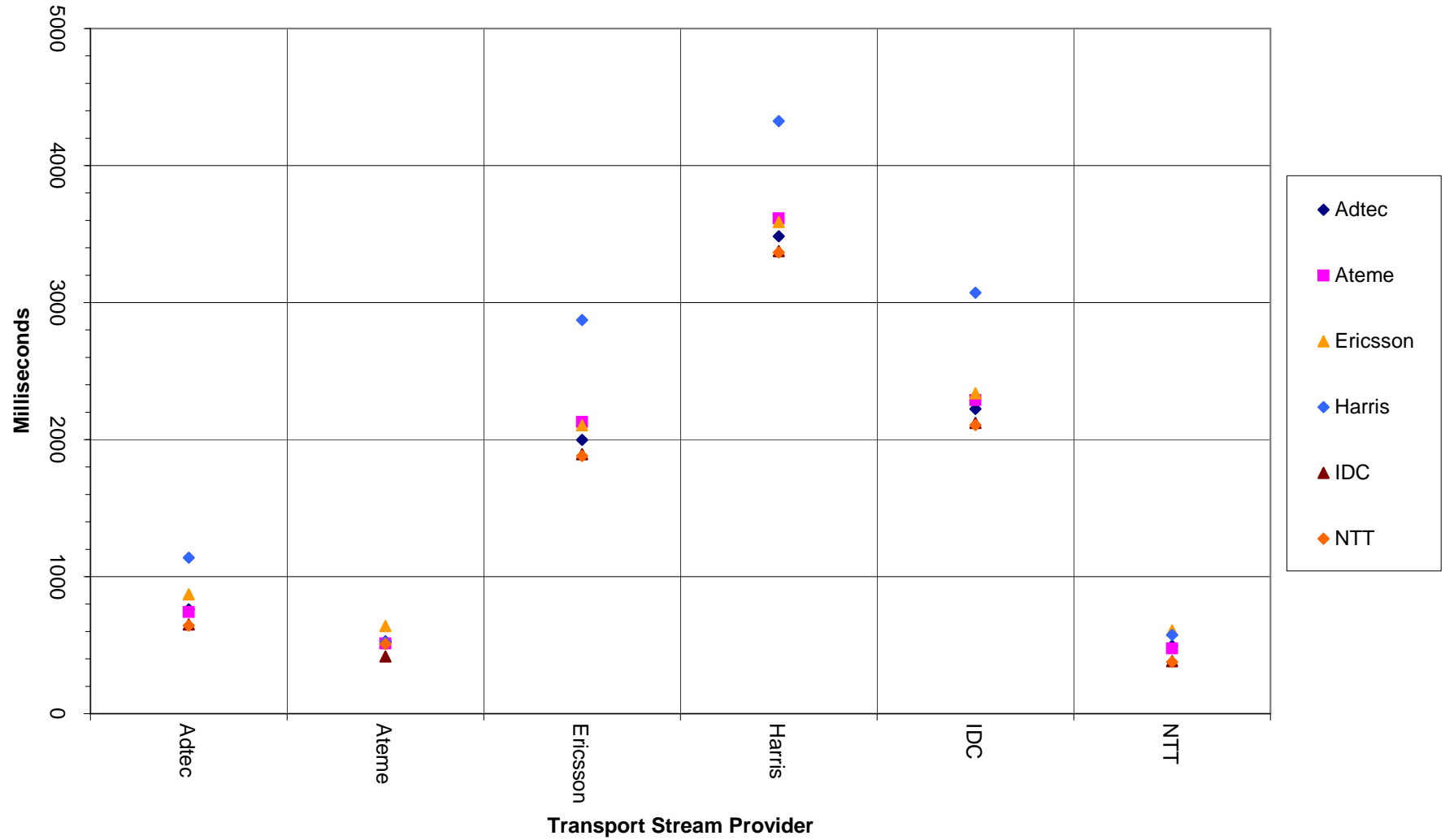
TS2 Settings - High Quality 38Mbps 420 System Latency



TS11 Settings - Medium Quality 20Mbps System Latency



TS17 Settings - SNG Quality 10.3 Mbps System Latency



TS22 Settings - Mid Quality 20 Mbps Lowest System Latency

