



Proving timestamp traceability

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The thing about complying with accuracy regulations

- Firms must not only comply; they must demonstrate that they comply
- That's trickier than with other regs
- BTW: We're talking about timestamp accuracy, not just clock accuracy (includes application level)
- And remember: The burden of proof is on the regulated firm (at least in Europe)
- This is a recipe for confusion and cost

*Regulators themselves can't judge
a technical implementation*



The key to demonstrating compliance

The key is **NOT**:

A checklist of technologies
(Great technologies can yield bad results.)

The key **IS**:

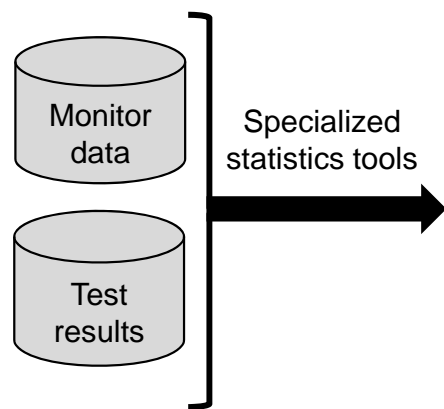
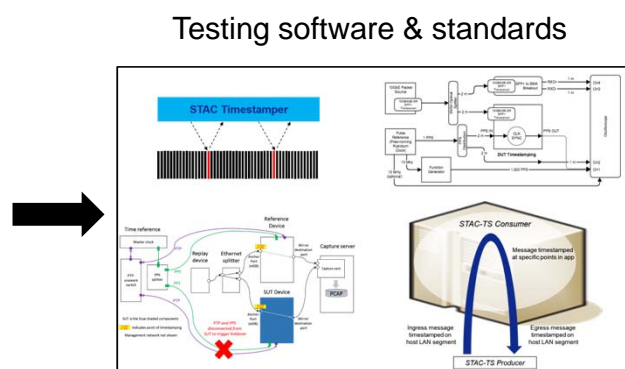
Testing and monitoring
(These tell you how things actually work.)

- Why would a regulator trust your testing & monitoring? Standards.
 - FIX clock-sync working group (monitoring)
 - STAC-TS™ (testing and full traceability reporting)

STAC-TS Working Group

Vendors
(Time sync / Timestamping / Capture)

Users
(HFT shops / Exchanges / Banks)



STAC Traceability Report Generated by: Firm XYZ Report date: 15 May 2018

INTERVAL ANALYSIS

Time Interval
2018-04-17T08:00:00Z to 2018-04-19T16:30:00Z

Timestamping Point ID: 354 Timestamping Point Class: 62
Accuracy with respect to: APPLICATION EVENTS clockType: CLOCK_REALTIME
Core: 31 OS build: 274
Server build: 736
PTP client: x.y.z PTP LAN: Segment A22

Highest Error Magnitude (microseconds)			Error Range (microseconds)		
99%	99.99%	Max	99%	99.99%	Max
2	6	81	0 +/- 1	3 +/- 3	40 +/- 41

Traceability Decomposition (microseconds)						
Component	99%	99.99%	Max	Exceptions	Source/Hyperlink	
Platform type X.Y - Application-level error	1 +/- 1	3 +/- 3	40 +/- 40	None	STAC-TS.ALE results	
Platform type X.Y - PTP solution A, network segment A22 - Host clock error	0 +/- 0	0 +/- 0	0 +/- 1	None	Loop stats (host daemon)	
Acme PTP boundary clock model 82m	0 +/- 0	0 +/- 0	0 +/- 0	None	STAC-TS.CE1 results	
Acme Grand Master Clock v2.4 as PTP master	0 +/- 0	0 +/- 0	0 +/- 0	None	STAC-TS.CE4 results	
GPS signal	0 +/- 0	0 +/- 0	0 +/- 0	None	GPS bulletin	