Across Time and Space:
MiFID, MAR, Dodd-Frank and Universal Time

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A Little History

- Trading in the 1970s
  - Equities traded on a physical exchange, with a specialist and open outcry, or OTC over the phone.
  - Bonds traded OTC, D2C trades were always over the phone, as principal.
  - Commodities traded in pits, with brokers and locals and open outcry.

So...

- People had control of every order.
- Volume was lower and trading was slower.

Time really wasn't that important

Trading today is largely electronic

- Behind the scenes, markets are all about time
  - When did the order go in?
  - When was the bid or offer made?
  - When did the execution occur?
- Time affects the quality of execution
  - What was the market when your order went in?
  - How long did it take your order to get in?
  - When did your order trade?
  - What happened in the market between when your order went in and the execution?

And it’s not just about execution quality

- Time is how we detect market abuse
  - Spoofing
    - How long were orders available for execution?
  - Painting the Close
    - How much before the close was a trade done?
  - Wash Trading
    - How long between offsetting trades?
  - Painting the Tape
    - How long between trades between market-makers?

Thus market regulators globally have gotten into managing time.

What do the regulations say?

- The EU: MiFIR/MiFID II/MAR/MAD
  - These regulations say nothing specific about synchronization, except...
  - Article 50 of MiFID II requires that “ESMA shall develop draft regulatory technical standards to specify the level of accuracy” of business clocks.
  - On July 6th ESMA published the Delegated Regulation and its Annex.
    - The reg requires sync with UTC
    - The Annex sets out the level of accuracy

The question of applicability

- The delegated directive applies to “Operators of trading venues and their members or participants.”
- Trading venues are: RMs, MTFs, OTFs, SIs
- Participants are “Persons having access to regulated markets or MTFs”
- But not “users who only access the trading venues via direct electronic access”

So is an asset manager who executes a trade on a venue through a broker a market participant?

The MiFIR/MiFID levels of accuracy

Gateway-to-gateway latency time of the trading system	**Maximum divergence from UTC**	**Granularity of the timestamp**
> 1 millisecond	1 millisecond	1 millisecond or better
=< 1 millisecond	100 microseconds	1 microsecond or better

- Thus the latency of the trading system determines both divergence and granularity, with latency defined as:
  "from the moment a message is received by an outer gateway of the trading venue's system...until an acknowledgement is sent from the gateway."

So the speed of the trading venue's system determines the accuracy requirement.

The US - what does Dodd-Frank say?

- Actually, nothing
- As of today, the CFTC (swaps, commodities) has no rule on clock synchronization.
- However, FINRA Regulatory Notice 16-23 does address the question:
  - It was issued in July, 2016;
  - It is effective in Feb 2017 for systems that capture time in milliseconds;
  - It is effective in Feb 2018 for systems that don’t;
  - Firms will have six months from the effective date to comply;
  - It is reflected in FINRA Rule 4590.

What does Rule 4590 say?

- Applicability – It applies to “Each member” of FINRA, not to venue members or participants.
- Coverage – “Business clocks, including computer system clocks and mechanical time stamping devices, that are used for purposes of recording the date and time of any [reportable] event.”
- Source – It specifies “the National Institute of Standards' (NIST) atomic clock” not UTC.
- Accuracy – For NMS securities, clocks “must be synchronized within a 50-millisecond tolerance of the NIST clock,” not dependant on latency; for non-NMS securities, within 1 second.

SEC Rule 613

- This is the Consolidated Audit Trail (CAT) Rule.
- The NMS plan requires “Each national securities exchange, national securities association, and member of such exchange or association to synchronize its business clocks that are used for the purposes of recording the date and time of any reportable event.”
- The approved plan (dated 4/27/2016) requires 1 millisecond granularity and 50-millisecond synchronization.

What does it all mean?

1. The EU rules apply to market participants, while the US rules to FINRA members.
2. The EU rules rely on UTC, while the US rules rely on the NIST clock.
3. The EU divergence rule is driven by system clock speed, while the US rules aren’t.
4. The EU rules cover both divergence and granularity, the FINRA rules only cover divergence, CAT covers both and the CFTC has nothing.
5. And there are different tolerances.

So we may need several different compliance efforts.

Some practical considerations

- There is a point of granularity below which we cannot go.
  - It actually takes some time to perform market actions.
  - It actually takes some time to measure and record time.
- What we're after is fairness in the markets.
  - Everyone has a fair chance to get an execution.
  - We can reliably detect market abuse.

How granular do we have to get to ensure these?

Any questions?

Thanks for your attention