AggTrade Data Documentation

📂 Data Structure Reference

Source Sheets (AggTrade Execution Data)

Each timeframe has a **dedicated execution sheet**.

- **Sheet Naming Convention:**
  `"AT_(timeframe)"`
- **Examples:**
  `"AT_1m"`, `"AT_5m"`, `"AT_15m"`, `"AT_1h"`, `"AT_4h"`, `"AT_1d"`

📐 Sheet Layout Configuration

- **Header Row:** `Row 3`
- **Data Start Row:** `Row 4`
- **Control Cell:** `F3`

Streaming Trigger Formula (Cell F3)

```
=AggTradeStreamWindow("BTCUSDT", 1)
```

⚙️ What This Formula Actually Does

This is not a normal Excel formula.

Behind the scenes:

- Python **async engine**
- XlOil **bridge**
- Binance **REST + WebSocket**
- Event-driven **real-time refresh**

are all running.

📊 Column Schema (All AggTrade Sheets)

> Same schema for all timeframes — consistency is mandatory.

Column	Field Name	Data Type	Description	Analytical Use Case
F	TradeTimeIST	DateTime	Exact execution time (IST, UTC+5:30)	Time gaps, sequencing
G	Price	Decimal	Actual filled execution price (USDT)	VWAP, volatility, OHLC
H	Quantity	Decimal	Executed trade quantity (BTC)	Volume, CVD, imbalance
I	AggTradeID	Integer	Unique aggregated trade ID	Deduplication, trade count
J	FirstTradeID	Integer	First underlying trade	Reference only
K	LastTradeID	Integer	Last underlying trade	Reference only
L	IsBuyerMaker	Boolean	Aggression direction flag	Order flow analysis
M	IsBestMatch	Boolean	Exchange matching indicator	Data quality filtering

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🔴 Critical Interpretation Rule (Must Remember)

AggTrade data **directional labels are commonly misunderstood** — so this rule is fixed:

- `IsBuyerMaker = FALSE`
  → **Aggressive Market BUY**
  (Buyer lifted the ask)

- `IsBuyerMaker = TRUE`
  → **Aggressive Market SELL**
  (Seller hit the bid)

> ⚠️ **Important Note**
> These labels:
>
> - ❌ are not trading signals
> - ✅ are only for **order flow description**

🔄 AggTrade Streaming Architecture (Python → Excel)

Data Origin

- **Exchange:** Binance
- **REST Endpoint:** `/api/v3/aggTrades`
- **WebSocket Stream:** `<symbol>@aggTrade`

Why AggTrade Instead of Candles

Candles:

- Aggregated
- Synthetic
- Hide execution details

AggTrades:

- ✅ Actual fills
- ✅ Actual size
- ✅ Actual aggression

> **For risk & execution analysis, candles are insufficient.**

🚀 Streaming Execution Flow

Step 1: REST Backfill (Initial Context)

- Latest confirmed executions are loaded
- Excel is never in an empty state
- Immediate execution context is available

Step 2: Time Normalization

- Binance timestamp → milliseconds (UTC)
- Convert → **IST (UTC + 5:30)**
- Excel shows **local execution time**

Step 3: Rolling Execution Window Control

```
minutes = 1
```

What this parameter actually means:

- ❌ Not a candle timeframe
- ❌ Not aggregation logic
- ✅ **Observation window**

Excel only shows trades that:

> **Were executed within the last N minutes**

Automatic Data Pruning

- Old trades automatically drop out
- No manual cleanup
- No repainting
- Clean rolling buffer

Professional Interpretation

> 🔑 **Changing window size does not change market structure**

> Only this changes:
> **How much recent execution data you observe**

Step 4: WebSocket Live Stream

- Continuous real-time executions
- Each new trade → new Excel row
- Duplicate AggTradeIDs ignored
- Event-driven (no polling)
