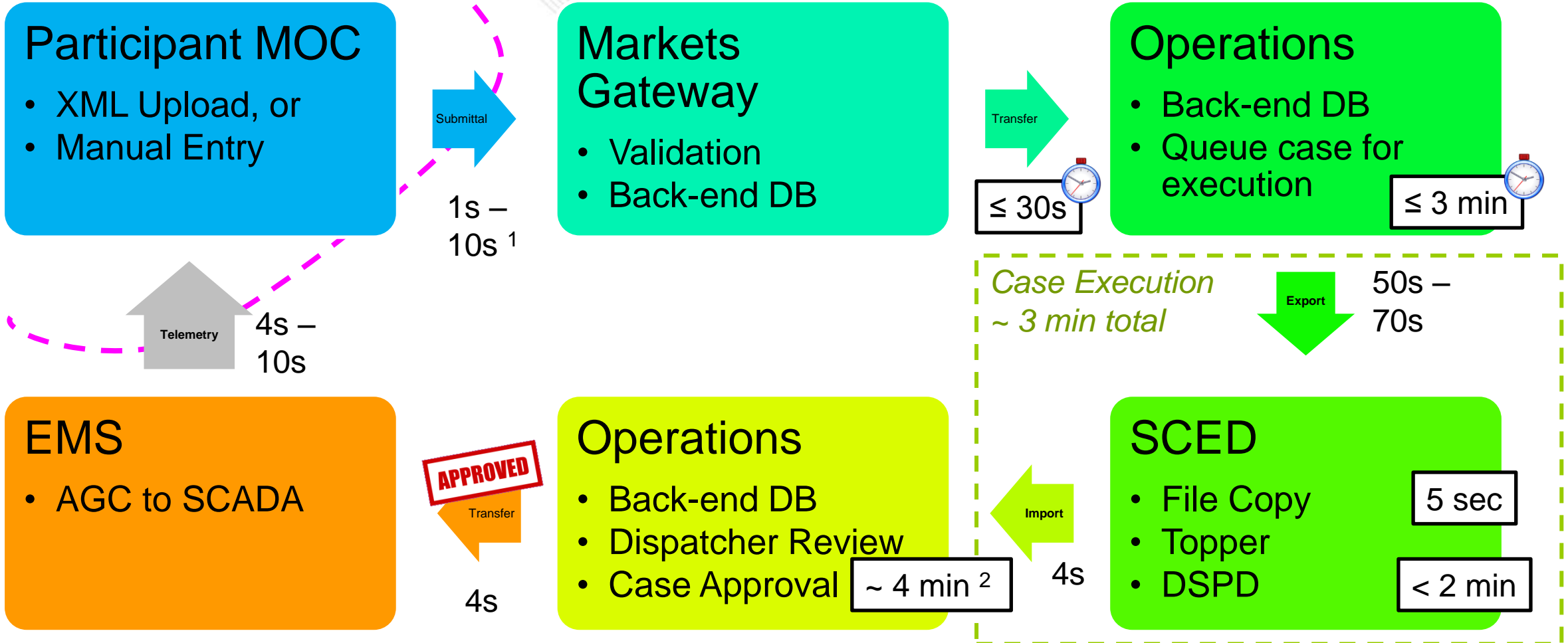# Markets Gateway to Case Approval Timing for ESR Dispatch

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Data Flow to SCED and Back Again

Participant MOC
- XML Upload, or
- Manual Entry

Submittal

1s – 10s [1]

Markets Gateway
- Validation
- Back-end DB

Transfer

≤ 30s

Operations
- Back-end DB
- Queue case for execution

≤ 3 min

Telemetry

4s – 10s

Case Execution ~ 3 min total

Export 50s – 70s

EMS
- AGC to SCADA

APPROVED

Transfer

4s

Operations
- Back-end DB
- Dispatcher Review
- Case Approval

~ 4 min [2]

Import

4s

SCED
- File Copy
- Topper
- DSPD

5 sec

< 2 min

[1]: function of packet size   [2]: see additional slides

- RT SCED is manually approved in PJM
  - 3 solutions of 10m look-ahead (low / base / high) every 3 minutes
  - Data is continuously presented to Generation Dispatcher through UE&V interface

- Manual review for reasonableness
  - Selection of low / base / high case for expected load forecast dev.
  - Approved case unit-specific desired output is sent to participant via SCADA

- Over the last year:
    - 4.8% of approvals took longer than 10 minutes
    - 0.2% of approvals took longer than 20 minutes
- Long durations due to system upgrades, market failovers
- Higher occurrence of longer durations between approvals in off-peak, afternoon scheduling of IT upgrades (mid-afternoon valley)
- Most frequent fast approvals in morning and evening ramps
    - Rate of change of load requires faster approval of new cases

- Parameter updates allowed intra-hour in Markets Gateway
  - Hourly Update tab for current and future hours (eco limits)
- Energy Offer updates for IDO-enabled resources:
  - Entry cutoff 65 minutes before the top of the operating hour
  - Data transfer from MG in ~ 10 sec → static for operating hour
  - Updates transferred to Execution environment in Export process

- State of Charge Management by Participant will be required
  - PJM Desired Output (economic basepoint) is your guide
  - Override as necessary locally

- State of Charge Management through Parameter Updates

- Worst case is a 10 minute round trip on data entry, average 6m
  – 10 Minute Look-ahead in solution for desired dispatch
    • Frequency Regulation Ancillary Service absorbs the slack
  – Case execution environment to be upgraded with NGEM (2019+)

- Case approval delay is a human performance variable
  – Accepted risk vs. approving an unreliable dispatch pattern