PJM Cybersecurity Education

John Conboy, Manager, IT
Compliance Services

Operating Committee

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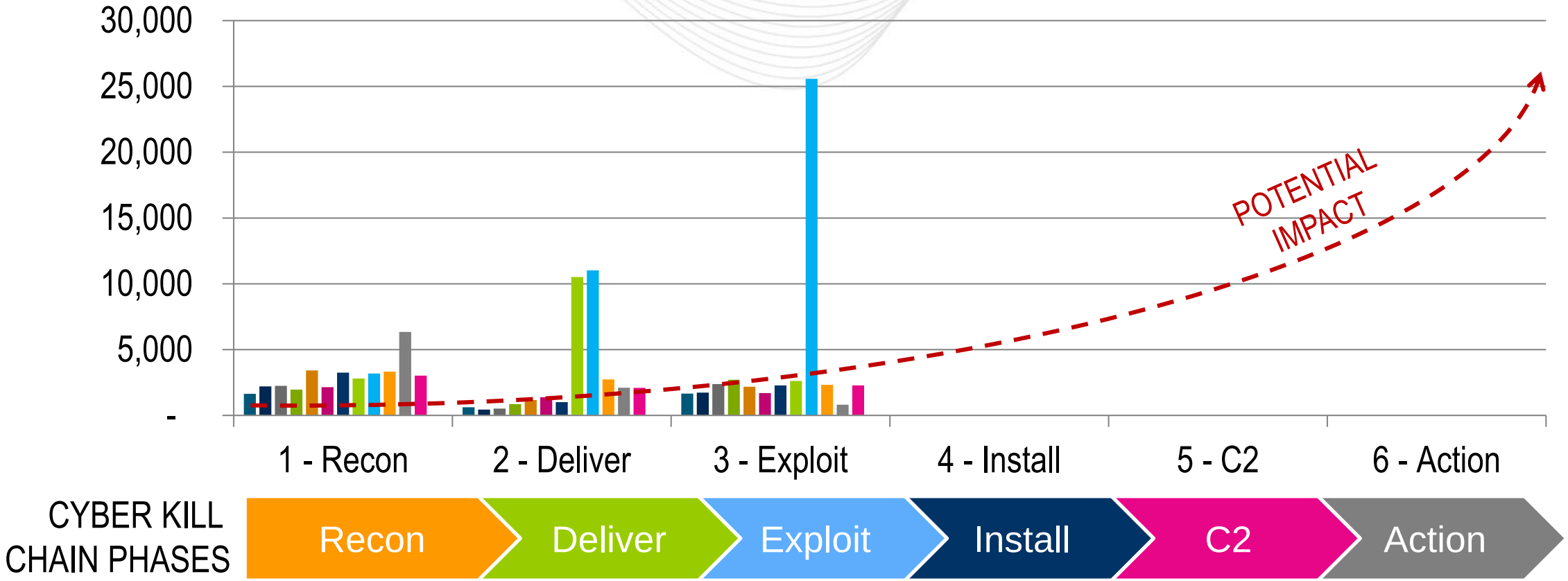
Progression of Badness



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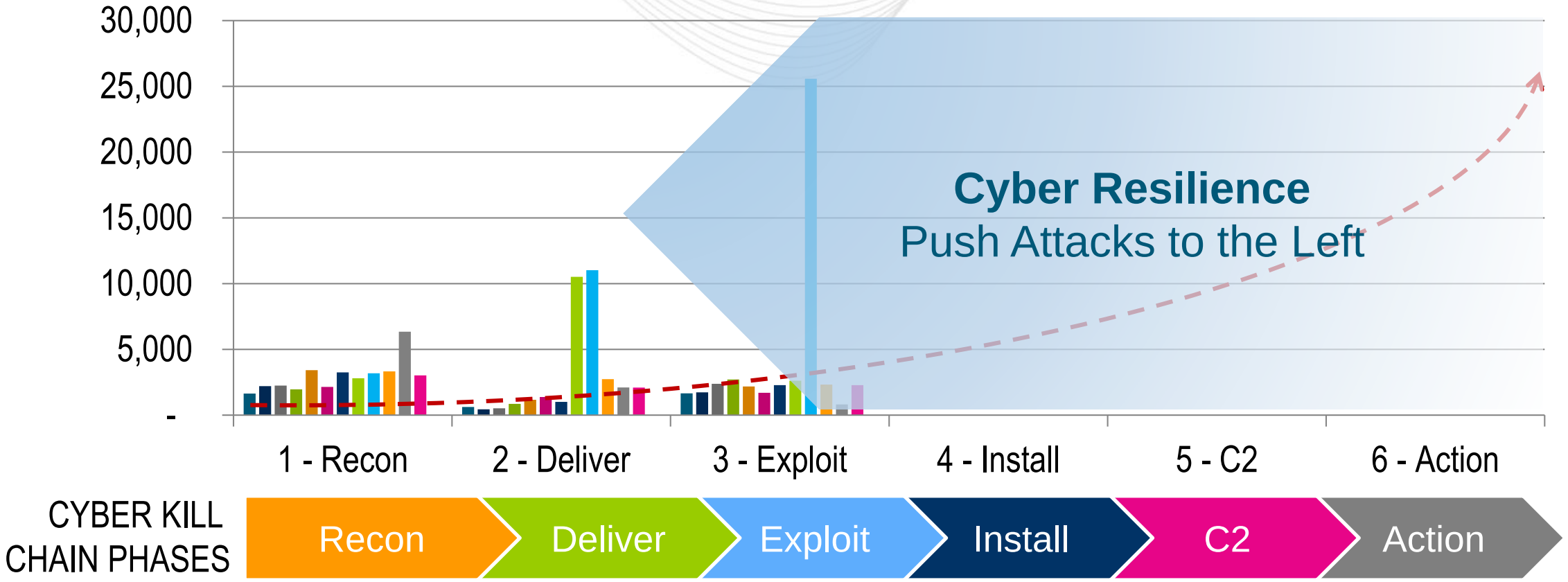
Cyber Resilience Objective



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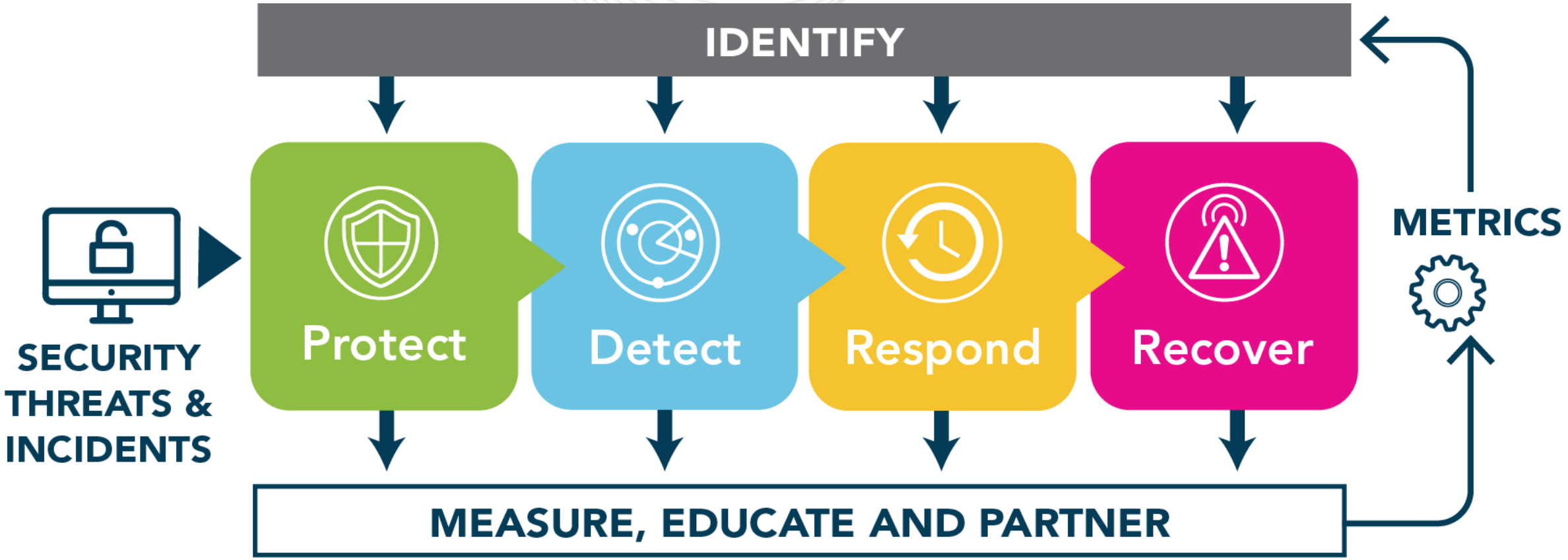
Cybersecurity Framework



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Applying Resilience to Cyber

Data Flow/Integrity	Infrastructure	Real-Time Operation
Communications Links	Software and Hardware	Failover Capability
“Gates”’ and Anomaly Detection	Network Segmentation	Resource Support and Allocation

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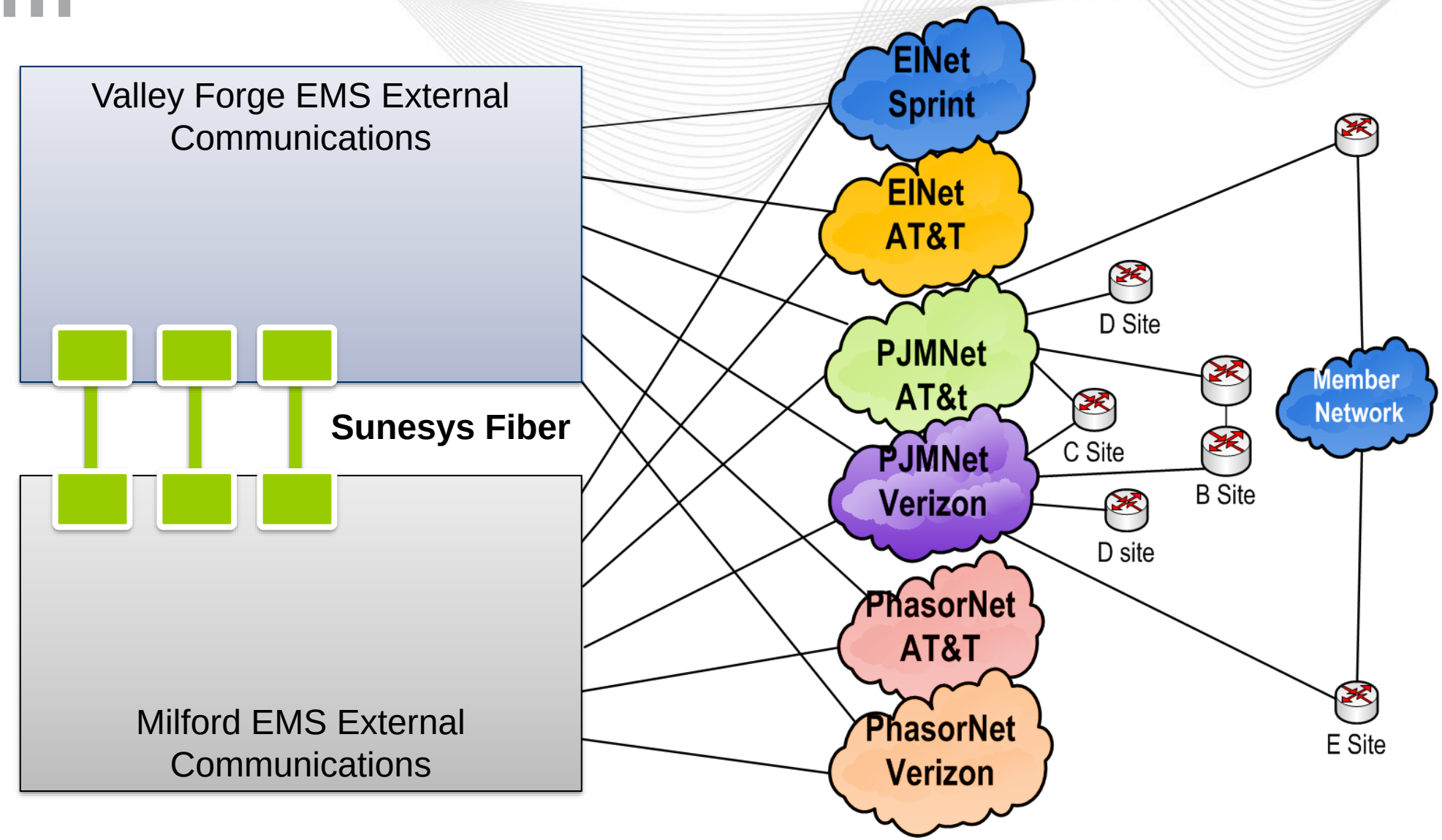
Real-Time Network Resilience



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System Recovery Precedence

1 Perform site swap

'DoR' to other 'good' site

~2 Minutes

2 Move to virtual backup site (vBUCC)

- AGC always available — **0** Minutes
- Start-up Network Applications (TNA) from recent 'snapshot' — **~5** Minutes
- Move Data links to vBUCC — **~15** Minutes

3 Initiate 'Rapid Recovery'

Includes matching model snapshot *(recovered later if needed)*

~30 Minutes

4 Move to 'offline' image (GI)

~60+ Minutes

5 Recover from backups

>60 Minutes

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Contact

Presenter:
John Conboy,
John.Conboy@pjm.com

PJM Cybersecurity Education

Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

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