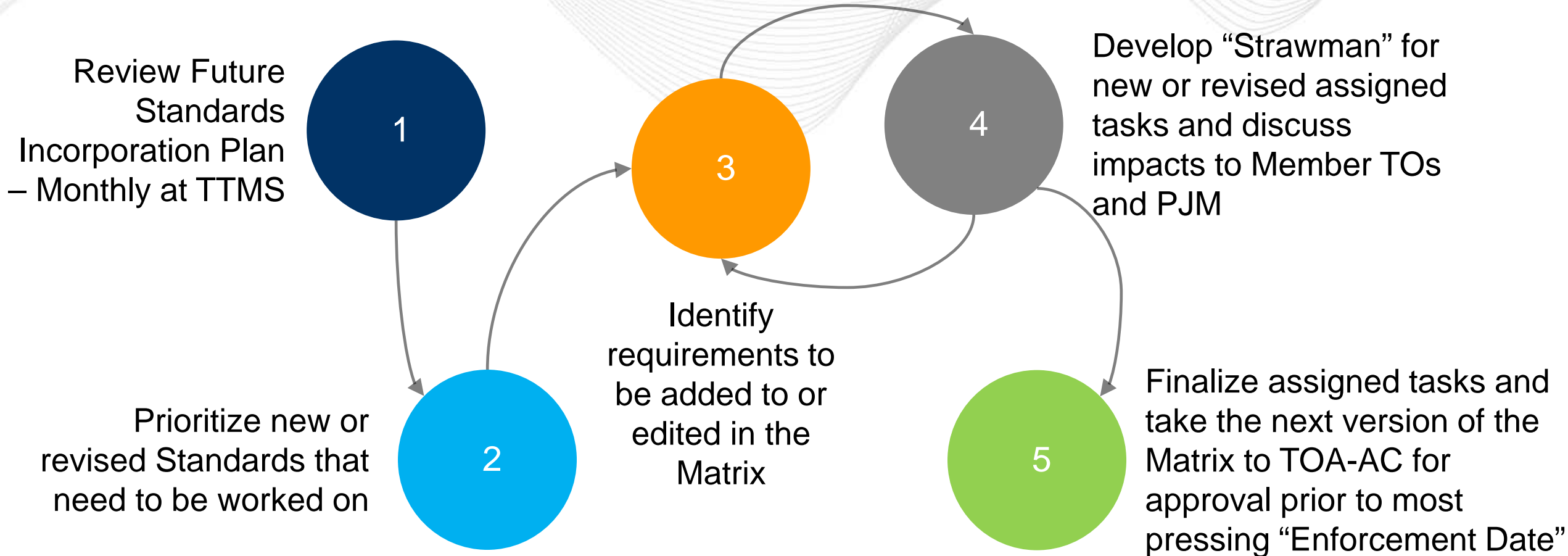


TO/TOP Matrix Subcommittee TOA-AC Update

Srinivas Kappagantula, Chair TTMS
TOA-AC Meeting
September 20, 2018

- TO/TOP Matrix Update Process
- TO/TOP Matrix V13 – Schedule
- Progress

TO/TOP Matrix Update Process





Future Standards Incorporation Plan

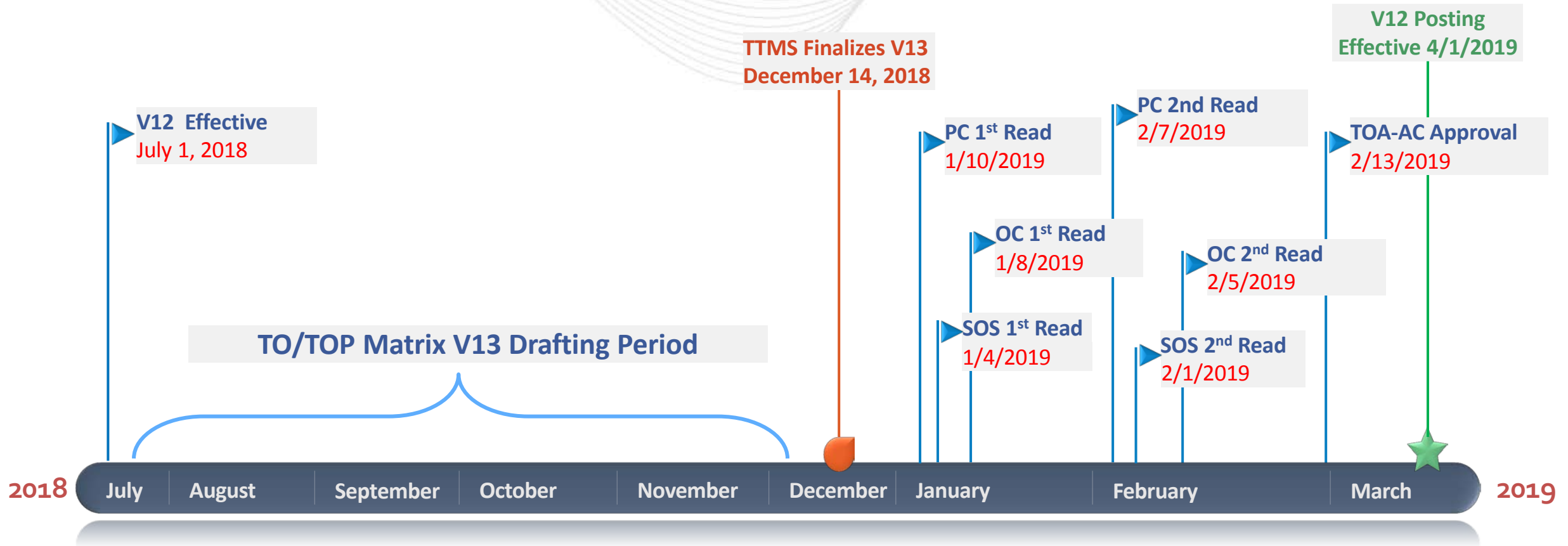
8/31/2019	Applicability										Standard Status	NERC BOT Adoption Date	FERC Filing Date	FERC Approval (Anticipated) Date	Enforcement Date	Inactive Date	TTMS Strawman Start Date	Matrix Status
Standard Number	Title	BA	IA	PA	PC	RC	RP	TOP	TP	TSP								
BAL-002-2	Disturbance Control Standard - Contingency Reserve for Recovery from a Balancing Contingency Event	BA									Current	11/5/2015	1/29/2016	1/19/2017	1/1/2018		1/1/2017	Not Applicable To Matrix
BAL-002-3	Disturbance Control Standard - Contingency Reserve for Recovery from a Balancing Contingency Event	BA									Future	8/16/2018	8/17/2018	8/16/2019	NA			Not Applicable To Matrix
BAL-005-0.2b	Automatic Generation Control	BA						TOP			Current	3/8/2012	6/5/2012	9/13/2012	5/13/2009	12/31/2018	NA	Completed V1
BAL-005-1	Balancing Authority Control	BA									Future	2/11/2016	4/20/2016	9/20/2017	1/1/2019		1/1/2018	Not Applicable To Matrix
BAL-502-RFC-03	Planning Resource Adequacy Analysis, Assessment, and Documentation	BA									Current	8/10/2017		10/16/2017	1/1/2018		1/1/2017	Not Applicable To Matrix
COM-001-2.1	Communications	BA				RC		TOP			Retired					9/30/2017	NA	Completed V9.1
COM-001-3	Communications	BA				RC		TOP			Current	8/11/2016	8/15/2016	10/28/2016	10/1/2017		10/1/2016	Completed V11
COM-002-4	Operating Personnel Communications Protocol	BA				RC		TOP			Current	5/6/2014		4/16/2015	7/1/2016		7/1/2015	Completed V9
EOP-004-3	Event Reporting	BA				RC		TOP			Current	11/14/2015	2/3/2015	2/3/2016	4/1/2017	3/31/2019	NA	Completed V10
EOP-004-4	Event Reporting	BA				RC		TOP			Future	2/9/2017	3/27/2017	1/18/2018	4/1/2019		4/1/2018	In Progress V13
EOP-005-2	System Restoration from Blackstart Resources							TOP			Current	8/5/2009		3/17/2011	7/1/2013	3/31/2019	NA	Completed V7
EOP-005-3	System Restoration from Blackstart Resources							TOP			Future	2/9/2017	3/27/2016	1/18/2018	4/1/2019		4/1/2018	In Progress V13
EOP-006-2	System Restoration Coordination					RC					Current	8/5/2009		3/17/2011	7/1/2013	3/31/2019	NA	Not Applicable To Matrix
EOP-006-3	System Restoration Coordination					RC					Future	2/9/2017	3/27/2017	1/18/2018	4/1/2019	3/31/2019	NA	Not Applicable To Matrix
EOP-008-1	Loss of Control Center Functionality	BA				RC		TOP			Current	8/5/2010		4/21/2011	7/1/2013	3/31/2019	NA	Completed V7
EOP-008-2	Loss of Control Center Functionality	BA				RC		TOP			Future	2/9/2017	3/27/2017	1/18/2018	4/1/2019		4/1/2018	In Progress V13
EOP-010-1	Geomagnetic Disturbance Operations					RC		TOP			Current	11/7/2013		6/9/2014	4/1/2015		4/1/2014	Completed V8
EOP-011-1	Emergency Operations	BA				RC		TOP			Current	11/13/2014	12/29/2014	11/19/2015	4/1/2017		4/1/2016	No Assigned or Shared Tasks
FAC-001-3	Facility Interconnection Requirements										Future	2/11/2016	4/20/2016	9/20/2017	1/1/2019		1/1/2018	Not Applicable To Matrix
FAC-010-3	System Operating Limits Methodology for the Planning Horizon					RC					Current	11/13/2014	NA	11/19/2015	4/1/2017		4/1/2016	Not Applicable To Matrix
FAC-011-3	System Operating Limits Methodology for the Operations Horizon					RC					Current	11/13/2014	NA	11/19/2015	4/1/2017		4/1/2016	Not Applicable To Matrix
FAC-014-2	Establish and Communicate System Operating Limits			PA		RC		TOP	TP		Current	11/1/2006			4/29/2009		4/29/2008	Completed V3
IRO-001-4	Reliability Coordination - Responsibilities	BA				RC		TOP			Current	11/13/2014	3/18/2015	11/19/2015	4/1/2017		4/1/2016	Completed V10
IRO-002-4	Reliability Coordination - Monitoring and Analysis					RC					Retired	11/13/2014	3/18/2015	11/19/2015	4/1/2017	9/30/2017	NA	Not Applicable To Matrix

Notes/Assumptions:

- All dates key off from the FERC Filing Date
- All standards assumed to be approved by FERC within one year of the NERC Filing
- Effective date calculated based on implementation time (if any)
- Strawman draft date of at least 6 months, preferably 12 months, in advance of the standard effective date
- Standards not filed with FERC do not have a timeline
- All standards that are enforceable in the future are included
- All standards applicable to PJM are listed. Those that are not applicable for incorporation into the Matrix are clearly indicated

Legend

- Completed** The assigned or shared tasks for applicable requirements have been incorporated into the appropriate version of the TO/TOP Matrix
- Needs Review** The NERC Reliability Standard needs to be reviewed to identify requirements that will have assigned or shared task in the TO/TOP Matrix
- Not Applicable to Matrix** The NERC Reliability Standard did not have any TOP requirements that will have to be reviewed for incorporation into the TO/TOP Matrix
- No Assigned or Shared Tasks** The NERC Reliability Standard had TOP requirements applicable to PJM; however, a review of those requirements did not identify a need for assigned or shared tasks in the TO/TOP Matrix
- In Progress** The TTMS is currently working on developing the assigned or shared tasks to be incorporated into the TO/TOP Matrix



F O C U S A R E A S

TOP-001-4 R20, R21 Added

- Redundant and diversely routed data exchange infrastructure within TOP's primary Control Center
- Testing for redundant functionality
- RF/NERC believe PJM TO's should comply through the Matrix
- PJM CB027
- NERC DEIRTF

EOP-004-4, EOP-005-3, & EOP-008-2

- EOP-004-4 – R2 added, same assigned tasks as before
- EOP-005-3: Retired R7 & R8, added a new requirement for training (R8.5)
 - Training on Transition of Demand and resource balance within its area to the Balancing Authority
 - Minor changes to existing assigned tasks
- EOP-008-2: Minor changes to existing assigned tasks to align with revised requirements

