Project SchedHar | Changes on Swiss borders

Aarau, 8. June 2018

swissgrid

We have now moved to Aarau!

Our new Address is:
Swissgrid AG
Bleichemattstrasse 31
Postfach
5001 Aarau

1 Introduction / Motivation for change / significant changes
2 Impact on balance group management
3 Implementation phases
4 Project planning
5 New Processes
6 BG qualification tests
7 Next steps
Annex: detailed processes for all borders

swissgrid

Introduction

- During BGM User Group Meeting of 23 November 2017, we informed you about the planned changes on scheduling process
- In this webinar we wish to explain all Balance Group Managers further details
- Participants on Swissgrid side are:

Projectmanager

Head of Stakeholder Affairs

Responsible for BG Acceptance Tests

Responsible for BGM Partner Meeting

Senior Application Specialist

Responsible for BGM Expert Group

swissgrid

Motivation for change

- Harmonisation with majority of electrical markets
- Reduction of market entry barriers for Balance Groups
- Simplification of scheduling process
- Compliance with ENTSO-E standards
- Harmonisation of cross-border scheduling
- Greater independence from neighbouring TSO
- Increased synchronization of scheduling process with capacity allocation
- Increased operational security / redundancy
- Reduced maintenance effort
- Increased automation
- Management of future scheduling volume
- New IT technology
- Increased cybercrime

swissgrid

Significant changes

- Integration of Swissgrid Nomination System (SNS) functionality into Schedule Management System (SMS)
  - Merger of the “usage of long-term rights” with the “scheduling process”
  - Introduction of rights-based scheduling
- Introduction of long-term matching process
- Fixed intra-day matching cycles per border
- Secure IT connection for the market participants

swissgrid

Impact on balance group management (1/4)

- **Separate notification of usage of rights no longer needed as it is merged with nomination of schedules**
- **Introduction of rights-based TPS nomination at Swissgrid for all cross-border schedules, using**
  - Process-Type A17,
  - Business-Type A03,
  - Capacity Contract Type and Capacity Agreement-ID as delivered by capacity provider

BGM have to switch the TPS nomination to “right-based resolution” for all borders (AT, DE, FR, IT) at the same time

swissgrid

Impact on balance group management (2/4)

- **Long-term matching process with APG, RTE and Terna**
  - It is no longer possible to adjust confirmed schedules of previous processes in a later process (e.g. yearly TS in DA process)

- **No changes for BGs only active in Swiss internal scheduling**

swissgrid

Impact on balance group management (3/4)

- **Currently active Balance Groups in cross-border scheduling have to verify rights-based TPS scheduling following adjusted BG qualification test procedures**
  - Tests have to be coordinated with Swissgrid instead of DNV-GL
  - Test platform is still hosted by DNV-GL

- **Communication with Swissgrid can be switched to a more secure channel**
  - More information about this topic will be given on 22nd November 2018 during BGM Partner Meeting

swissgrid

Impact on balance group management (4/4)

Following table lists changes as well as respective section in technical balance group regulations where points are explained in detail

Section	Changes
1.2	Details of new CAI and CCT for cross-border trades
7	New schedule difference rules for cross-border trades
8	Capacity checks for cross-border trades
9	Introduction of long-term schedule coordination and adjustment of nomination rules at all Swiss borders
10	Adjustment of the long-term process
11	Adjustment of the day-ahead process
12	Adjustment of the intra-day process at the borders with Austria, Germany and France
13	Adjustment of the intra-day process for short-term business types at the French border
14	Adjustment of the intra-day process at the border with Italy
18	Adjustment of the time for the sending of the SRQ to Swissgrid
21	Content and structure of individual documents expanded with ANC document and various reason codes and business types for CAI and CCT
22	ANC document added for naming conventions
23	ECP added as an additional communication channel for the transfer of data
26	Reference to BG Acceptance Test document added

Revised technical balance group regulations, which enter into force when changes go live,
can be found on Swissgrid website via the following link Technical Balance group regulations V3.0

swissgrid

Implementation phases

The project has following two phases

1. Harmonisation phase:

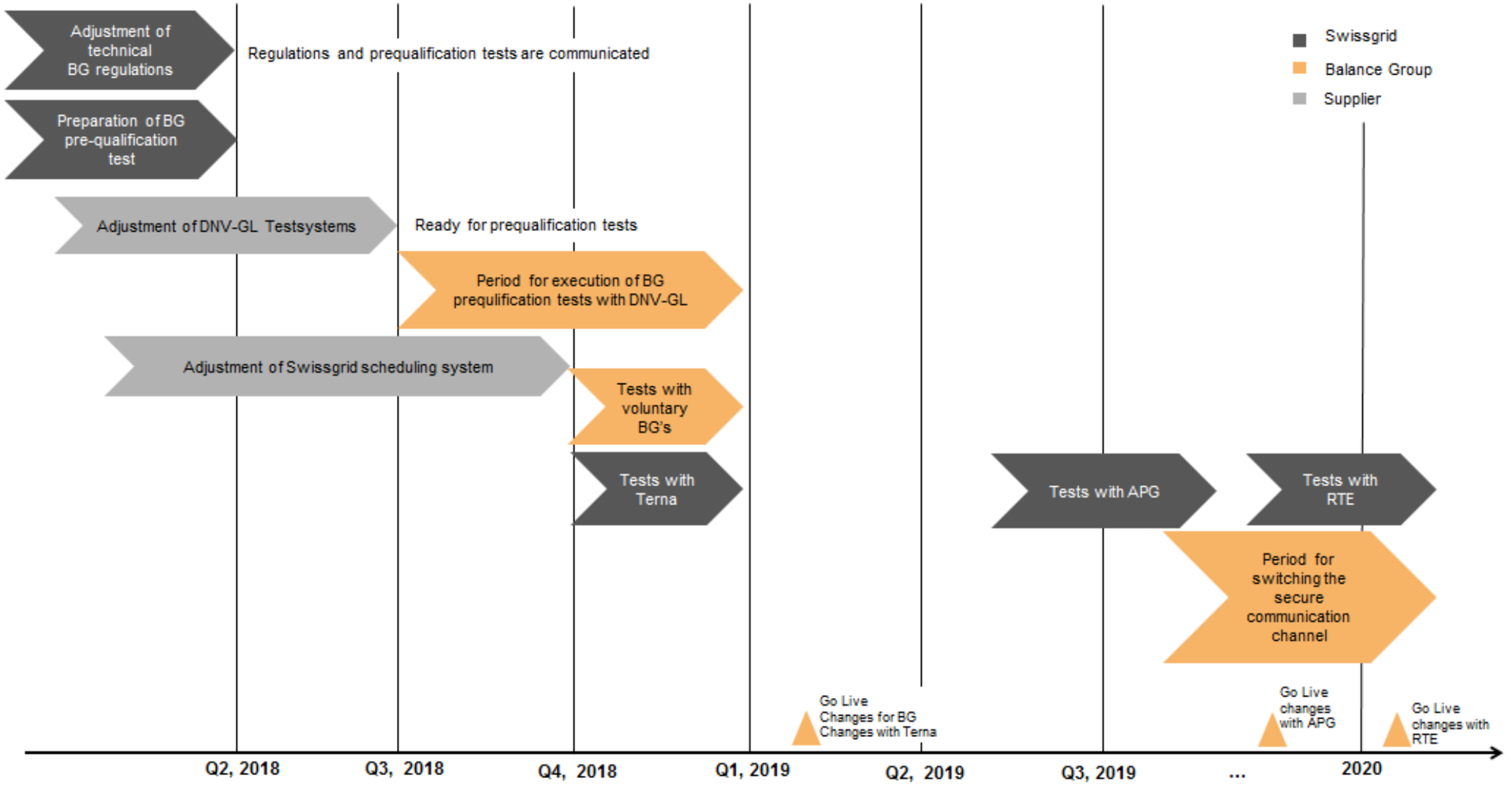
- Implementation of Swiss Nomination System (SNS) functionality in SMS
- Introduction of rights-based scheduling
- Switch to rights-based scheduling (CH-IT)
- Introduction on long-term matching (CH-IT)

2. Completion phase:

- Implementation of rights-based scheduling and long-term matching at CH-AT and CH-FR borders
- Begin migration of BG to secure connection by mid-2019

swissgrid

Project planning



swissgrid

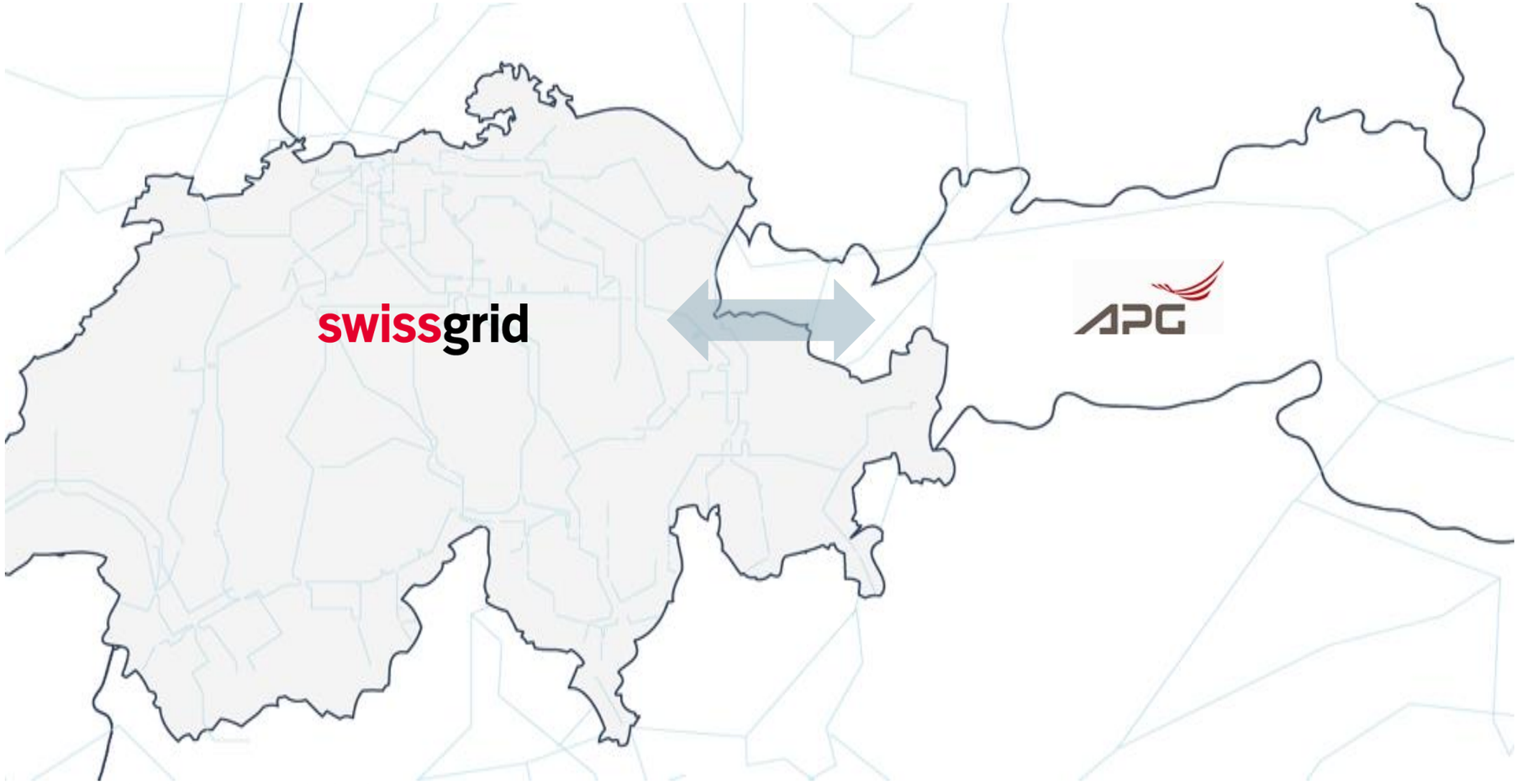
New Processes – Synchronising processes with neighbouring TSOs

- Rights-based matching with APG, Terna and RTE
- Introduction of long-term matching with APG, Terna and RTE
- Fixed intra-day scheduling cycles with German-, Austrian- and French-TSO
- For the time being German-TSOs will not implement rights based and long-term scheduling processes
  - Match rights-based TPS with total netted schedule provided by German-TSOs

swissgrid

New Processes – Target scheduling process (1/7) - Introduction

On the following slides the final, rights-based scheduling process is illustrated based on the Austrian border



swissgrid

New Processes – Target scheduling process (2/7) – Long Term process on all borders

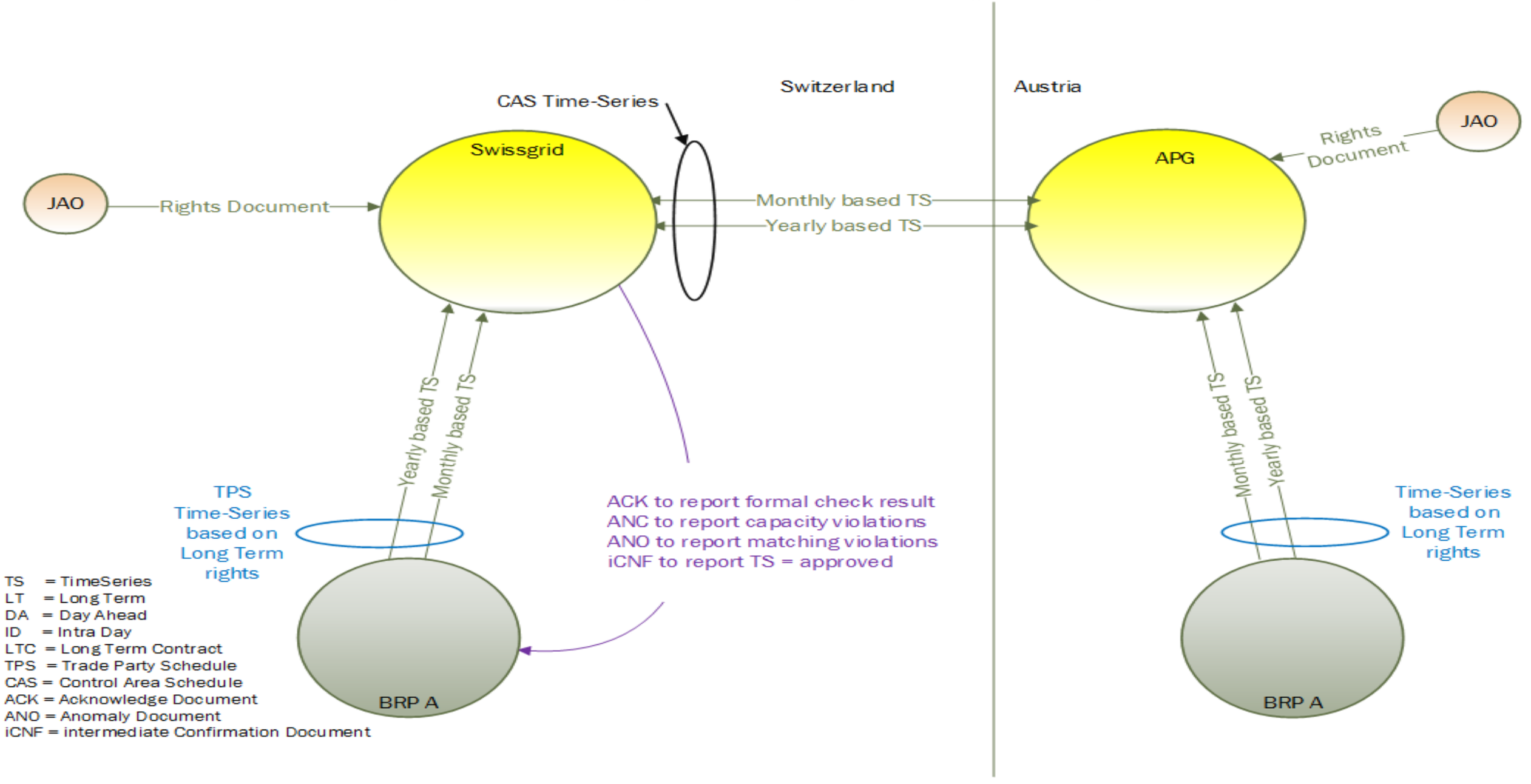
NO CHANGE on German TSOs side

Note:

- “Change” just means related to the cross border scheduling process between Swissgrid and the neighbouring TSO
- Related to the scheduling process between BG and Swissgrid there are changes on all borders

swissgrid

New Processes – Target scheduling process (3/7) – Long Term process with Austria

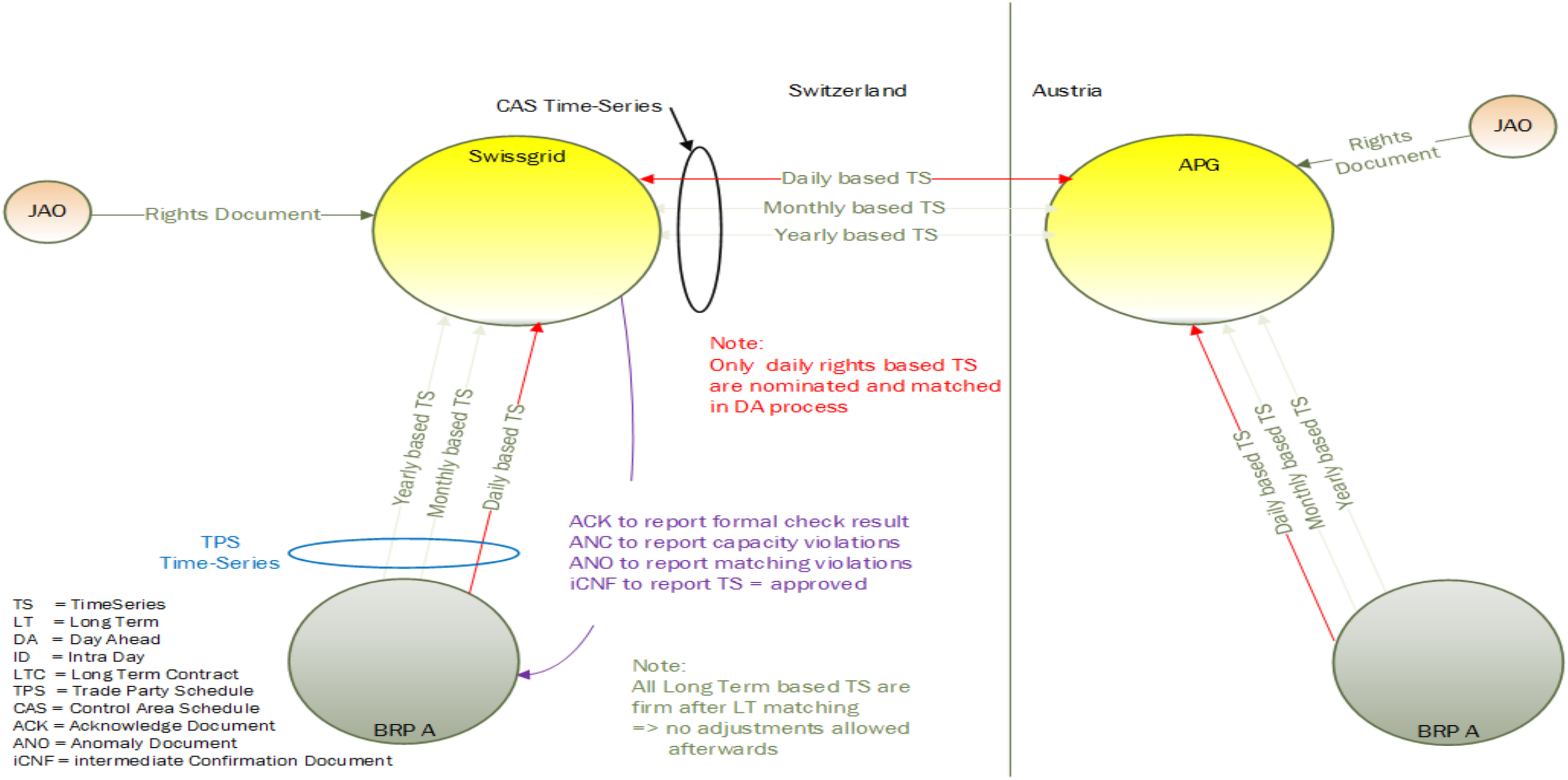


New Processes – Target scheduling process (4/7) – Day Ahead process on all borders

NO CHANGE on German TSOs side

swissgrid

New Processes – Target scheduling process (5/7) – Day Ahead process with Austria

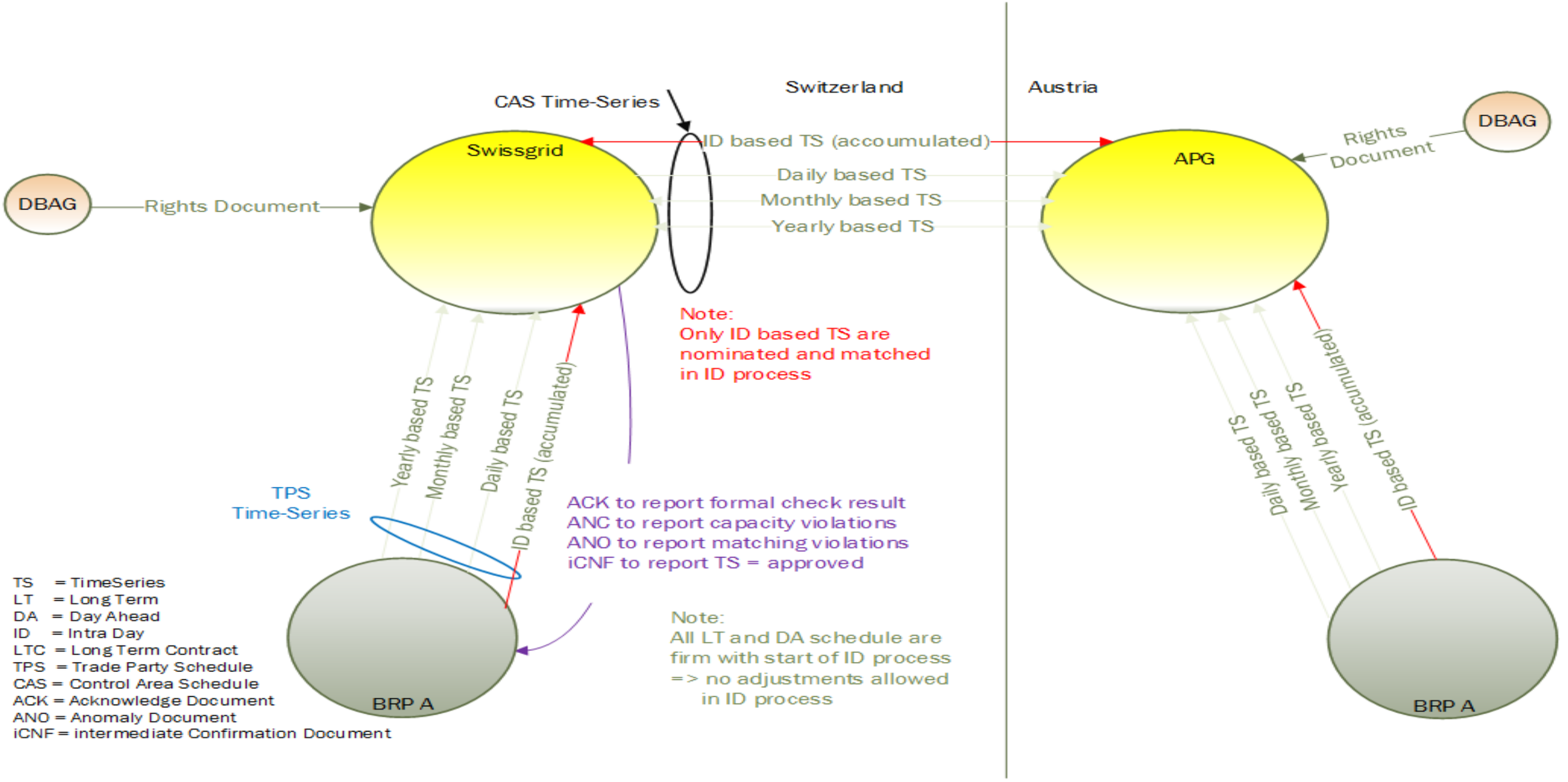


New Processes – Target scheduling process (6/7) – Intraday process on all borders

NO CHANGE on German TSOs side

swissgrid

New Processes – Target scheduling process (7/7) – Intraday process with Austria



New Processes – Transition phase (1/6) - Introduction

It is not possible to implement the changes on all CH borders at the same time

1. Implementation and concept validation of the announced changes on CH-IT border
2. Switch the process for the remaining borders after a stabilisation phase

→ Transition phases for AT and FR borders: match rights-based TPS schedules with total netted, neighbouring TSO schedules

swissgrid

New Processes – Transition phase (2/6) - Introduction

- Transition phase with AT- and FR- is equal to final scheduling process with DE-TSOs
- Swissgrid has to match rights-based TPS with total netted TSO schedules
- Just after Go Live of rights based scheduling process in Switzerland there is no **long term** matching for the borders
  - CH – FR,
  - CH – AT
  - CH – DE

On the following slides the scheduling process valid during the transition phase is illustrated based on the Austrian border

swissgrid

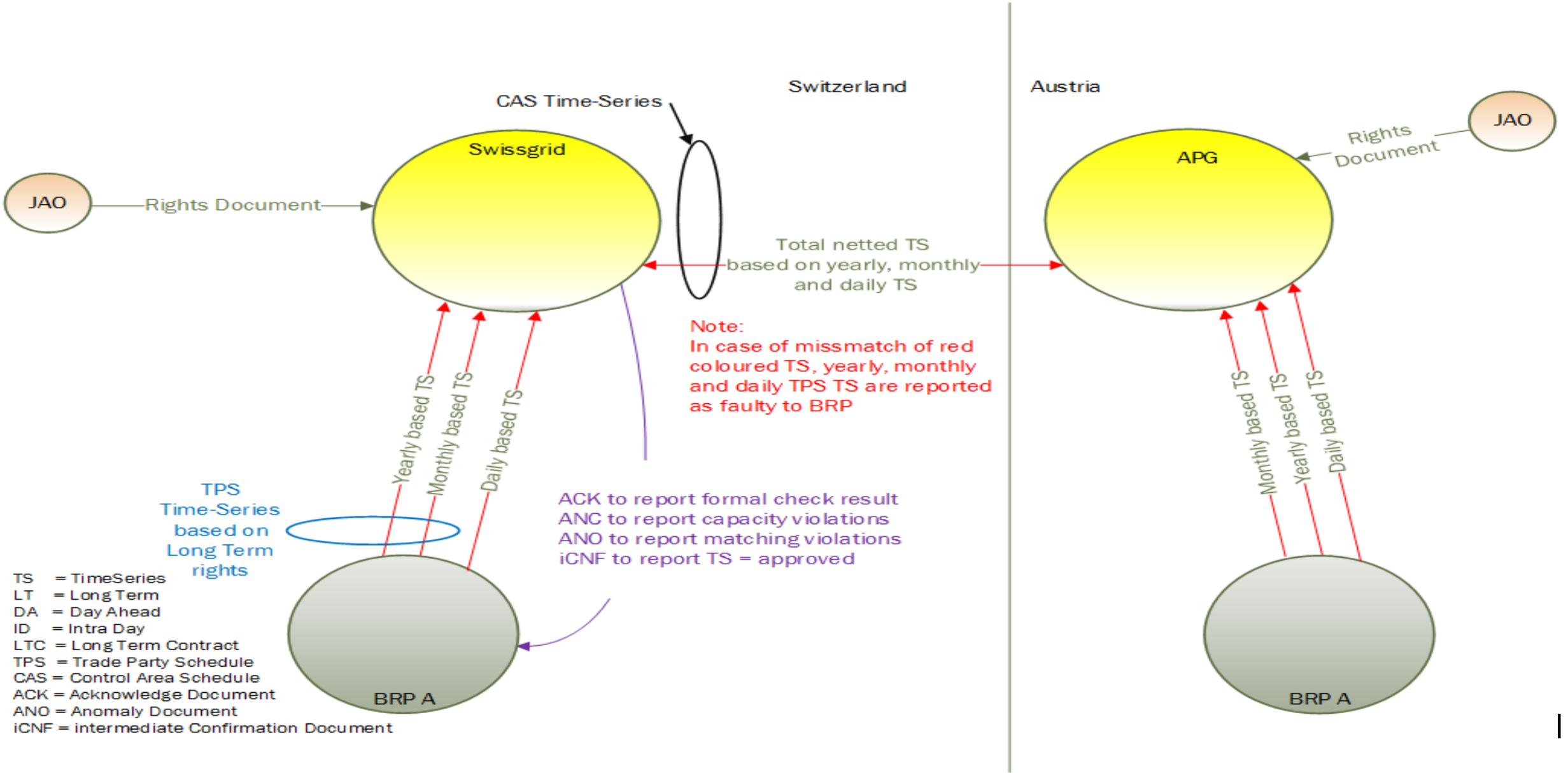
New Processes – Transition phase (3/6) – Day Ahead process for Austrian and French border

NO CHANGE on German TSOs side

Border CH – IT is already in target phase

swissgrid

New Processes – Transition phase (4/6) – Day Ahead process with Austria



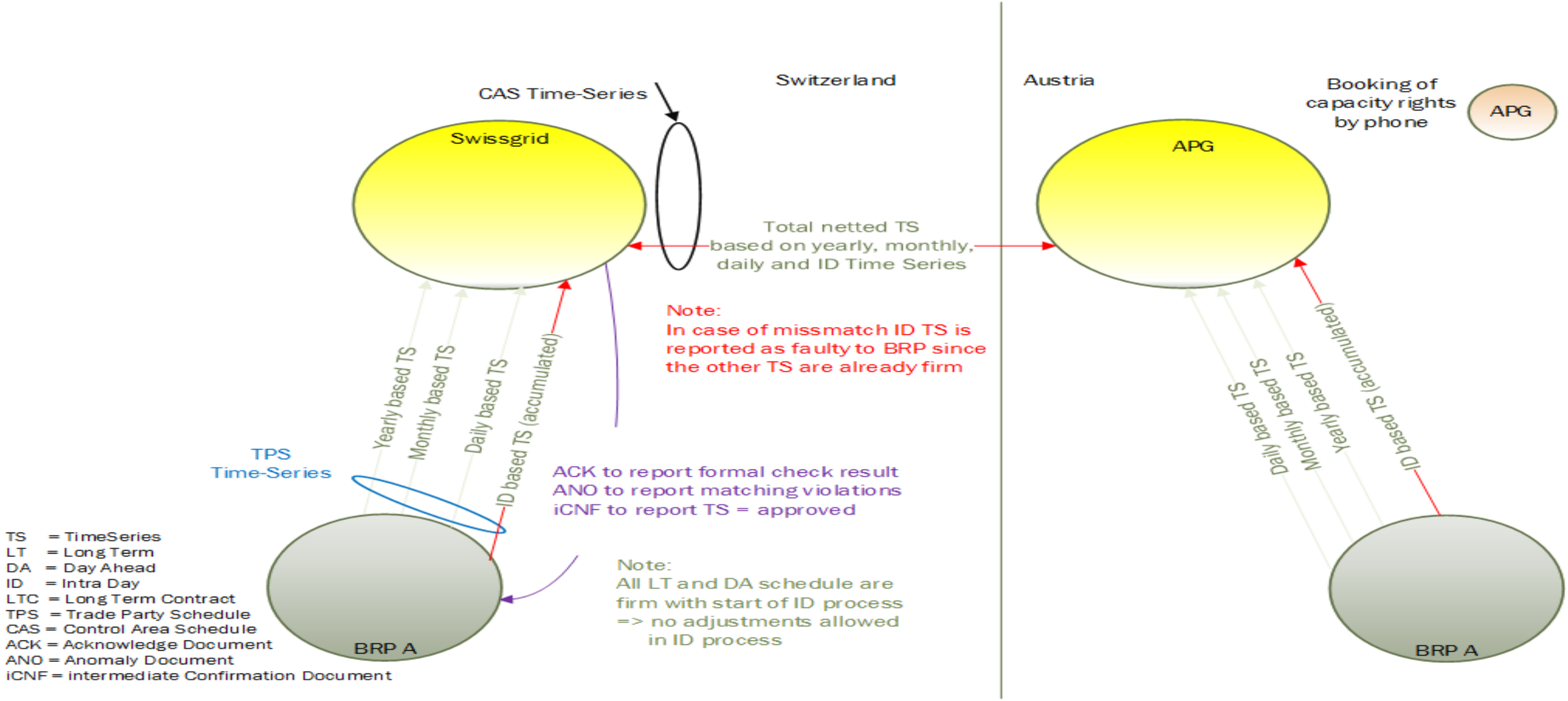
New Processes – Transition phase (5/6) – Intra Day process for Austrian and French border

NO CHANGE on German TSOs side

Border CH – IT is already in target phase

swissgrid

New Processes – Transition phase (6/6) – Intraday process with Austria



New Processes – Impact on CH-DE scheduling

- Cross-border matching process with German-TSOs will remain on total netted schedules
- Swissgrid has to match rights-based TPS with total netted German-TSOs schedules

The impact on the matching process with German-TSOs is the same as the one for the borders AT and FR during the transition phase

swissgrid

New Processes – Scheduling with DE TSO's, APG and RTE during transition phase

Impact on BGs in case of a mismatch at:

- **DA-gate-closure time**: Swissgrid (SG) will report yearly-(y), monthly-(m) and daily(d) based TPS Time-Series (TS) as faulty

- **DA-Cut-Off time**: SG will breakdown the total netted neighbouring TSO value into y-, m- and d based TPS TS. Whereby the rights are exhausted in the order y, m and d

Procedure in DA if SG is asked by BG to take over TS from neighbouring TSO

→ SG will breakdown the total netted neighbouring TSO value into y-, m- and d based TPS TS. Whereby the rights are exhausted in the order y, m and d and the current nomination of BG will not be taken into account

swissgrid

New Processes – Breakdown of a total netted DA SAS into rights based TPS Schedules

Example for the breakdown of a

- Total netted Day-Ahead SAS Time Series into yearly, monthly and daily TPS Time Series
  - During DA Scheduling process for
    - The German border as well as for
    - The France and Austrian border during the transition phase

This may be necessary in case of

- (Still) a mismatch at Cut Off Time
- BG ask Swissgrid to take over values from neighbouring TSO

Situation	Capa in both directions avaliable		
	Nomination in both directions		
	DE-SAS < ∑LT-rights		
$yR_{DE->CH}$	40	$yR_{CH->DE}$	20
$mR_{DE->CH}$	20	$mR_{CH->DE}$	10
$dR_{DE->CH}$	50	$dR_{CH->DE}$	25
$\sum capa_{DE->CH}$	110	$\sum capa_{CH->DE}$	55
At SG nominated		At SG nominated	
$yT_{DE->CH}$	38	$yT_{CH->DE}$	0
$mT_{DE->CH}$	20	$mT_{CH>DE}$	0
$dT_{DE->CH}$	0	$dT_{CH->DE}$	15
$\sum T_{DE->CH}$	58	$\sum T_{CH->DE}$	15
$\sum CH\text{-}SAS_{DE->CH}$	43	$\sum CH\text{-}SAS_{CH->DE}$	0
$\sum DE\text{-}SAS_{DE->CH}$	41	$\sum DE\text{-}SAS_{CH->DE}$	0
to be confirmed		to be confirmed	
$yT_{DE->CH}$	40	$yT_{CH->DE}$	0
$mT_{DE->CH}$	1	$mT_{CH->DE}$	0
$dT_{DE->CH}$	0	$dT_{CH->DE}$	0
$\sum T_{DE->CH}$	41	$\sum T_{CH->DE}$	0

swissgrid

New Processes – Comparison between transition and target phase (1/5) - Introduction

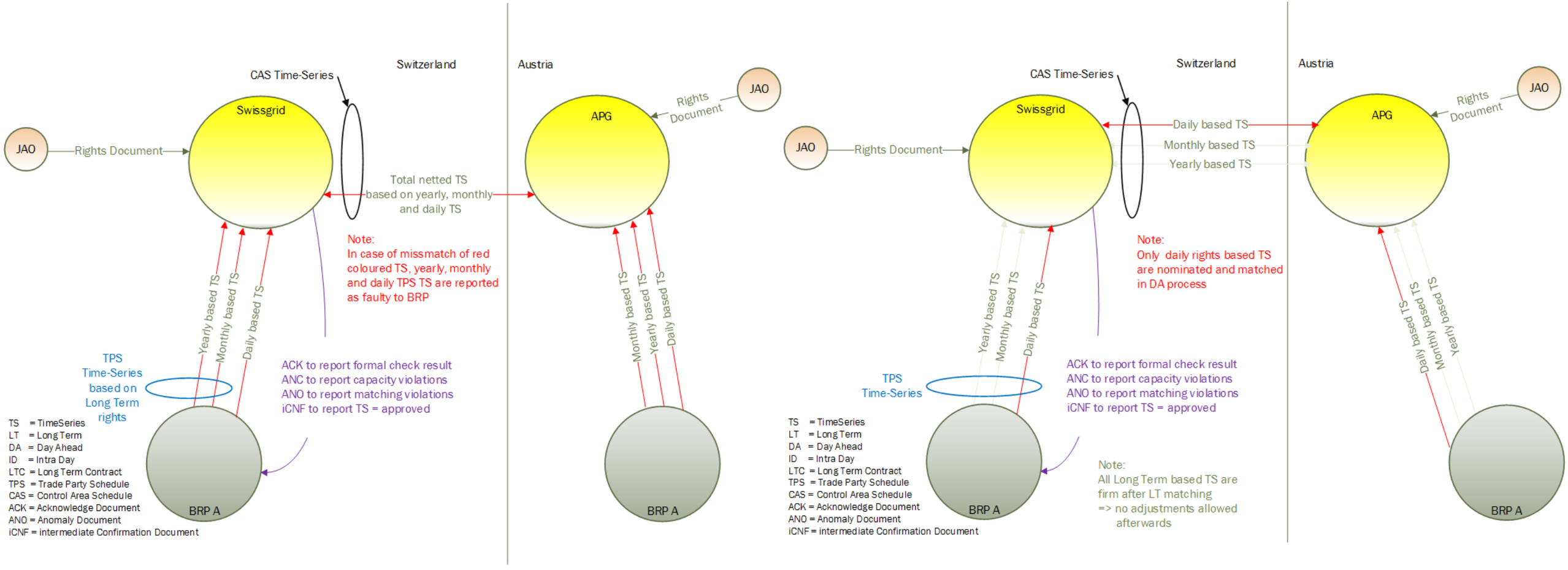
There is no LT matching process during the transition-phase for following borders

- CH – AT
- CH – FR

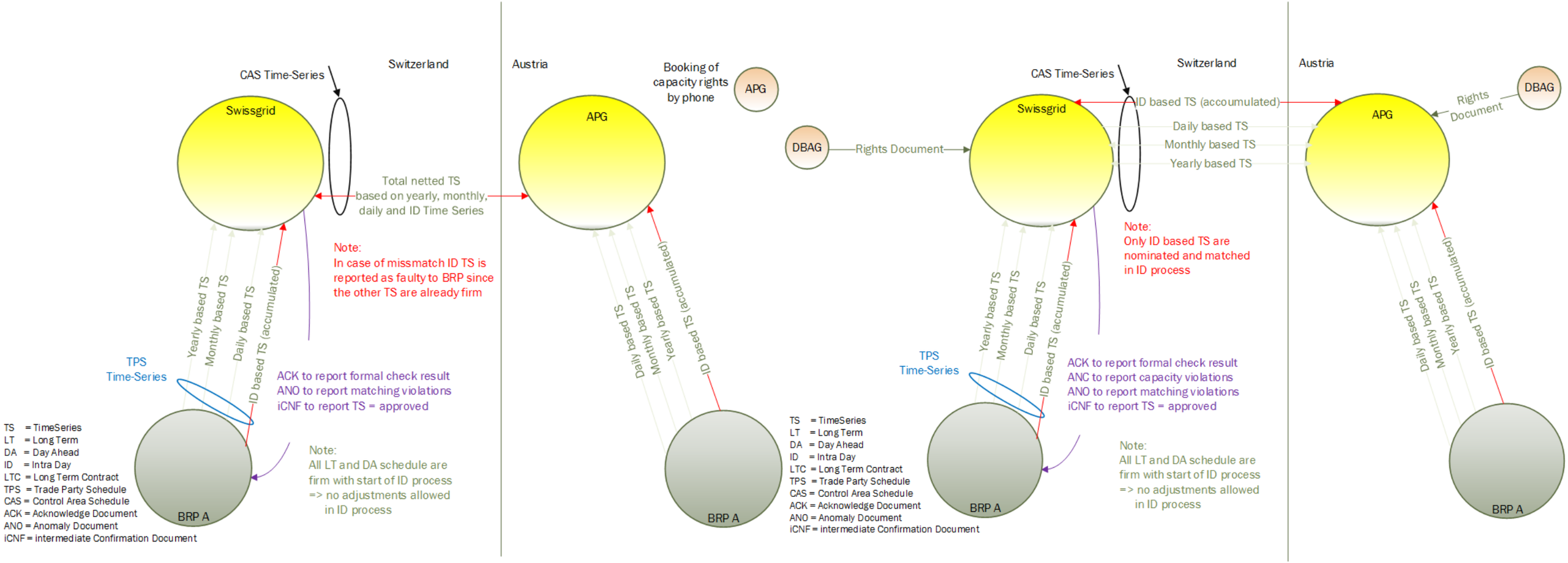
On the following slides the scheduling process valid during the transition phase is illustrated based on the Austrian border

swissgrid

New Processes – Comparison between transition and target phase (2/5) - Day Ahead Austrian border



New Processes – Comparison between transition and target phase (3/5) - Intraday Austrian border



swissgrid

New Processes – Comparison between transition and target phase (4/5) - Austrian border

	CH – AT	
	Transitionphase	**Targetphase**
Day Ahead	• Rights Document from JAO.	• Rights Document from JAO.
	• Matching against total netted TS from NTSO.	• Matching against rights based TS from NTSO.
	• In case of mismatch all nominated TS will be reported as faulty.	• In case of mismatch only Daily TS will be reported as faulty.
Intra Day	• Booking of capacity rights by telephone at APG. • No Rights Document.	• Rights Document from DB AG.
	• Only netted time series in the rights document for validation. • Even though the BRP has to send one time series for each direction.	• Only netted time series in the rights document for validation. • Even though the BRP has to send one time series for each direction.
	• Matching against total netted TS from NTSO.	• Matching against rights based TS from NTSO.
	• In case of mismatch only ID TS will be reported as faulty.	• In case of capacity violation only ID TS will be reported as faulty.

swissgrid

New Processes – Comparison between transition and target phase (5/5) – French border

	CH – FR	
	Transitionphase	**Targetphase**
Day Ahead	• Rights Document from JAO.	• Rights Document from JAO.
	• Matching against total netted TS from NTSO.	• Matching against rights based TS from NTSO.
	• In case of mismatch all nominated TS will be reported as faulty.	• In case of mismatch only adapted LT- and Daily TS will be reported as faulty.
Intra Day	• Rights Document from DB AG.	• Rights Document from DB AG.
	• Matching against total netted TS from NTSO.	• Matching against rights based TS from NTSO.
	• In case of mismatch only ID TS will be reported as faulty.	• In case of capacity violation only ID TS will be reported as faulty.

swissgrid

New Processes – Examples of certain DA Scheduling process scenarios

BG nomination violates the daily right

$yR_{AT->CH}$	40	$yR_{CH->AT}$	20
$mR_{AT->CH}$	20	$mR_{CH->AT}$	10
$dR_{AT->CH}$	50	$dR_{CH->AT}$	25
$\sum capa_{AT->CH}$	110	$\sum capa_{CH->AT}$	55
At SG nominated		At SG nominated	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	55	$dT_{CH->AT}$	0
$\sum T_{AT->CH}$	105	$\sum T_{CH->AT}$	0
SG SAS contains		SG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	55	$dT_{CH->AT}$	0
$\sum$CH-$SAS_{AT->CH}$	105	$\sum$CH-$SAS_{CH->AT}$	0
APG SAS contains		APG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0
$\sum$CH-$SAS_{AT->CH}$	95	$\sum$CH-$SAS_{CH->AT}$	0
ANC for BG as soon as rights doc is available			
$dT_{AT->CH}$	55		
$dR_{AT->CH}$	50		
ANO for BG when mismatch (earliest at GCT)			
dTPS-$T_{AT->CH}$	55		
dSAS-$T_{AT->CH}$	45		

BG corrects until COT, but just respecting the rights

$yR_{AT->CH}$	40	$yR_{CH->AT}$	20
$mR_{AT->CH}$	20	$mR_{CH->AT}$	10
$dR_{AT->CH}$	50	$dR_{CH->AT}$	25
$\sum capa_{AT->CH}$	110	$\sum capa_{CH->AT}$	55
At SG nominated		At SG nominated	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	50	$dT_{CH->AT}$	0
$\sum T_{AT->CH}$	100	$\sum T_{CH->AT}$	0
SG SAS contains		SG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	50	$dT_{CH->AT}$	0
$\sum$CH-$SAS_{AT->CH}$	100	$\sum$CH-$SAS_{CH->AT}$	0
APG SAS contains		APG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0
$\sum$AT-$SAS_{AT->CH}$	95	$\sum$AT-$SAS_{CH->AT}$	0
ANO for BG when mismatch (earliest at GCT)			
dTPS-$T_{AT->CH}$	50		
dSAS-$T_{AT->CH}$	45		
to be confirmed at COT			
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0

BG does not correct the nomination until COT

$yR_{AT->CH}$	40	$yR_{CH->AT}$	20
$mR_{AT->CH}$	20	$mR_{CH->AT}$	10
$dR_{AT->CH}$	50	$dR_{CH->AT}$	25
$\sum capa_{AT->CH}$	110	$\sum capa_{CH->AT}$	55
At SG nominated		At SG nominated	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	55	$dT_{CH->AT}$	0
$\sum T_{AT->CH}$	105	$\sum T_{CH->AT}$	0
SG SAS contains		SG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	55	$dT_{CH->AT}$	0
$\sum$CH-$SAS_{AT->CH}$	105	$\sum$CH-$SAS_{CH->AT}$	0
APG SAS contains		APG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0
$\sum$AT-$SAS_{AT->CH}$	95	$\sum$AT-$SAS_{CH->AT}$	0
to be confirmed at COT			
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0

BG corrects in line with the APG value until COT

$yR_{AT->CH}$	40	$yR_{CH->AT}$	20
$mR_{AT->CH}$	20	$mR_{CH->AT}$	10
$dR_{AT->CH}$	50	$dR_{CH->AT}$	25
$\sum capa_{AT->CH}$	110	$\sum capa_{CH->AT}$	55
At SG nominated		At SG nominated	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0
$\sum T_{AT->CH}$	95	$\sum T_{CH->AT}$	0
SG SAS contains		SG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0
$\sum$CH-$SAS_{AT->CH}$	95	$\sum$CH-$SAS_{CH->AT}$	0
APG SAS contains		APG SAS contains	
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0
$\sum$AT-$SAS_{AT->CH}$	95	$\sum$AT-$SAS_{CH->AT}$	0
to be confirmed			
$yT_{AT->CH}$	35	$yT_{CH->AT}$	0
$mT_{AT->CH}$	15	$mT_{CH>AT}$	0
$dT_{AT->CH}$	45	$dT_{CH->AT}$	0

In case of mismatch at COT, lower value is implemented

swissgrid

BG qualification tests (1/4)

- BGM systems have to be ready for testing by September 2018
- New registration of all BG on the new DNV-GL test platform necessary expectedly from September 2018
  - Old Accounts will be deleted
- Two different sort of tests available on the test platform
  - BG tests (test scenarios for the current processes)
  - SchedHar tests (test scenarios for the future processes for rights based nominations)
  - Both type of tests are reachable via https://dnvgl-test.com
- In Switzerland already registered BG which are not active in cross border scheduling don't have to participate at the SchedHar qualification tests
- Tests will be completed via the DNV-GL test platform, attended by Swissgrid
  - Any business requests to bg-registration@swissgrid.ch

swissgrid

BG qualification tests (2/4)

- **Scope of test is 15 mandatory and 1 optional test scenarios**
  - 4 mandatory formal test scenarios (LT/DA/ID/PSA)
  - 5 mandatory continuous matching test scenarios | positive tests (LT/DA/ID/PSA)
  - 5 mandatory continuous matching test scenarios | negative tests (LT/DA/ID/PSA)
  - 1 mandatory additional matching test scenario | negative test (DA)
  - 1 optional status request procedure

- **Link to the BG Acceptance test document on Swissgrid Website**
  - https://www.swissgrid.ch/dam/swissgrid/customers/topics/bgm/1/BG-Acceptance-Test-en.pdf

- **Example for the structure of each test scenario**

swissgrid

BG qualification tests (3/4)

Test description

5.1.2 **Long-Term, formal test description**

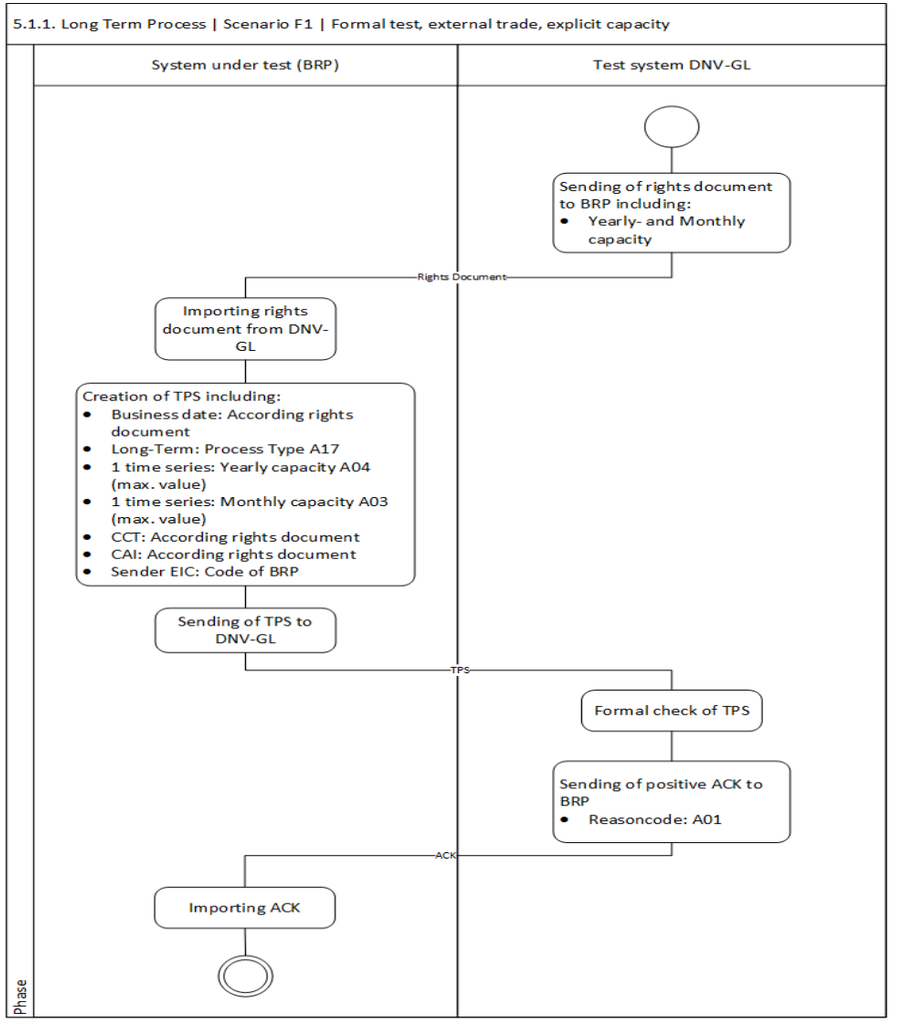
Scenario:	F1
Execution:	for all registered BG mandatory
Purpose:	Long-Term, formal test, external trade, explicit capacity
Note:	Only external Long-Term time series (yearly/monthly). LTC and ML rights are not part of the tests with DNV-GL.
Timing:	D-1 before 08:30

#	System Under Test	DNV-GL Test System
1		• DNV-GL sends a Rights Document including Yearly- and Monthly Capacity for the relevant business day to the BRP. (LTC and ML rights are not part of this test)
2	BRP sends a TPS: • TPS is set up according the rights document from DNV-GL ○ The max. values of Yearly- and Monthly capacity have to be used • Long-Term: Process type A17 • Number of time series according rights document with: Business type „A03“ (External trade explicit capacity) • Capacity contract type: Border CH-IT: “A04” (Yearly) “A03” (Monthly) • Capacity Agreement Identification: According Rights document from DNV-GL • Sender EIC code of BG	
3		For formally correct TPS: Sends a positive ACK message • Reason code A01
Note: • The schedule message and schedule time series must have the same version number (this is verified by the ESS formal test platform).		

swissgrid

BG qualification tests (4/4)

Sequence diagram



swissgrid

Next steps

- Implementation of new functionalities in BGM systems by September 2018
- Test platform will be ready in September 2018 for registration and reservation of test slots
  - For current BG tests and new SchedHar tests use the following address: https://dnvgl-test.com
  - As it is a complete new test platform every BGM has to register again
  - Swissgrid will inform all BRP as soon as the registration process is open
- Technical- & testing requests to bg-registration@swissgrid.ch
- BGM Partner Meeting will take place on Thursday, 22 November 2018 at the new Swissgrid head office in Aarau, there we will provide further information on the project situation

swissgrid

Thank you
for your attention

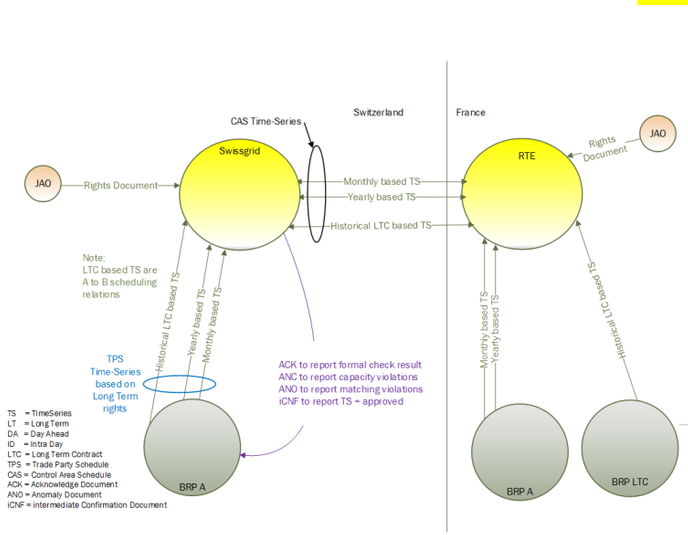
Swissgrid AG
Bleichemattstrasse 31
Postfach
5001 Aarau

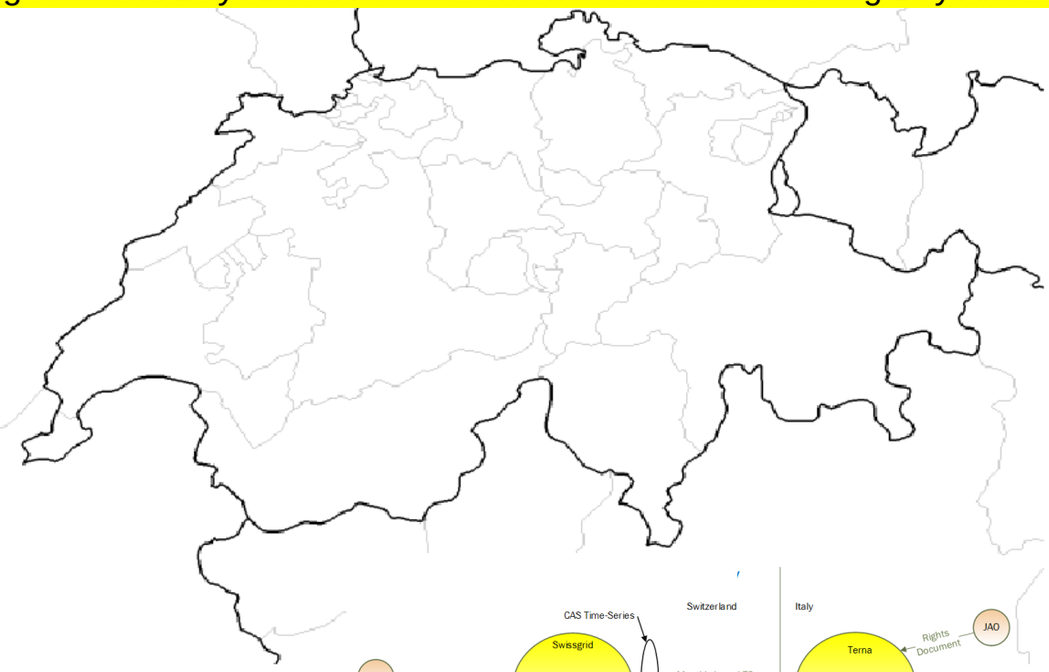
swissgrid

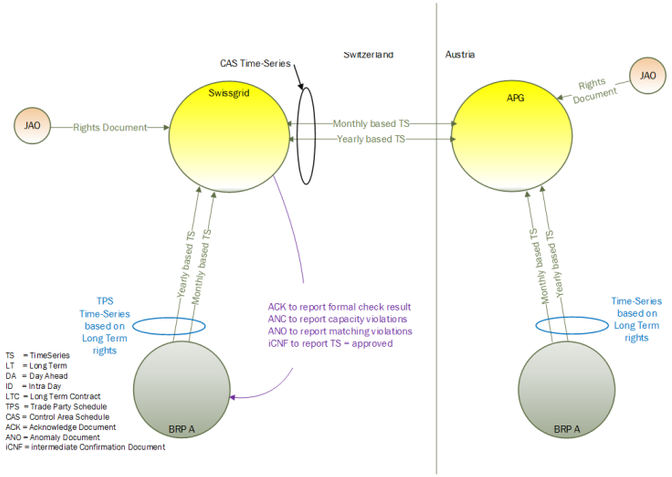
Annex: detailed processes for all borders

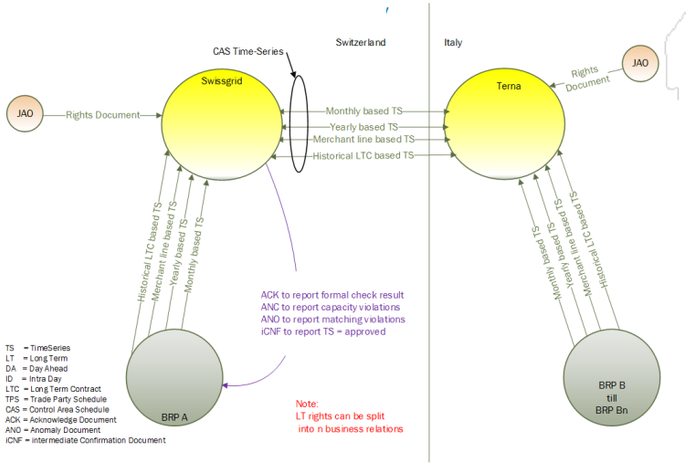
Targetphase – Long Term process on all borders (1/4) - Introduction

Rights-based nomination on Swissgrid side for border CH-DE.
Long term process stays unchanged on German TSOs side
Long term and Day Ahead nominations will be matched during Day Ahead process

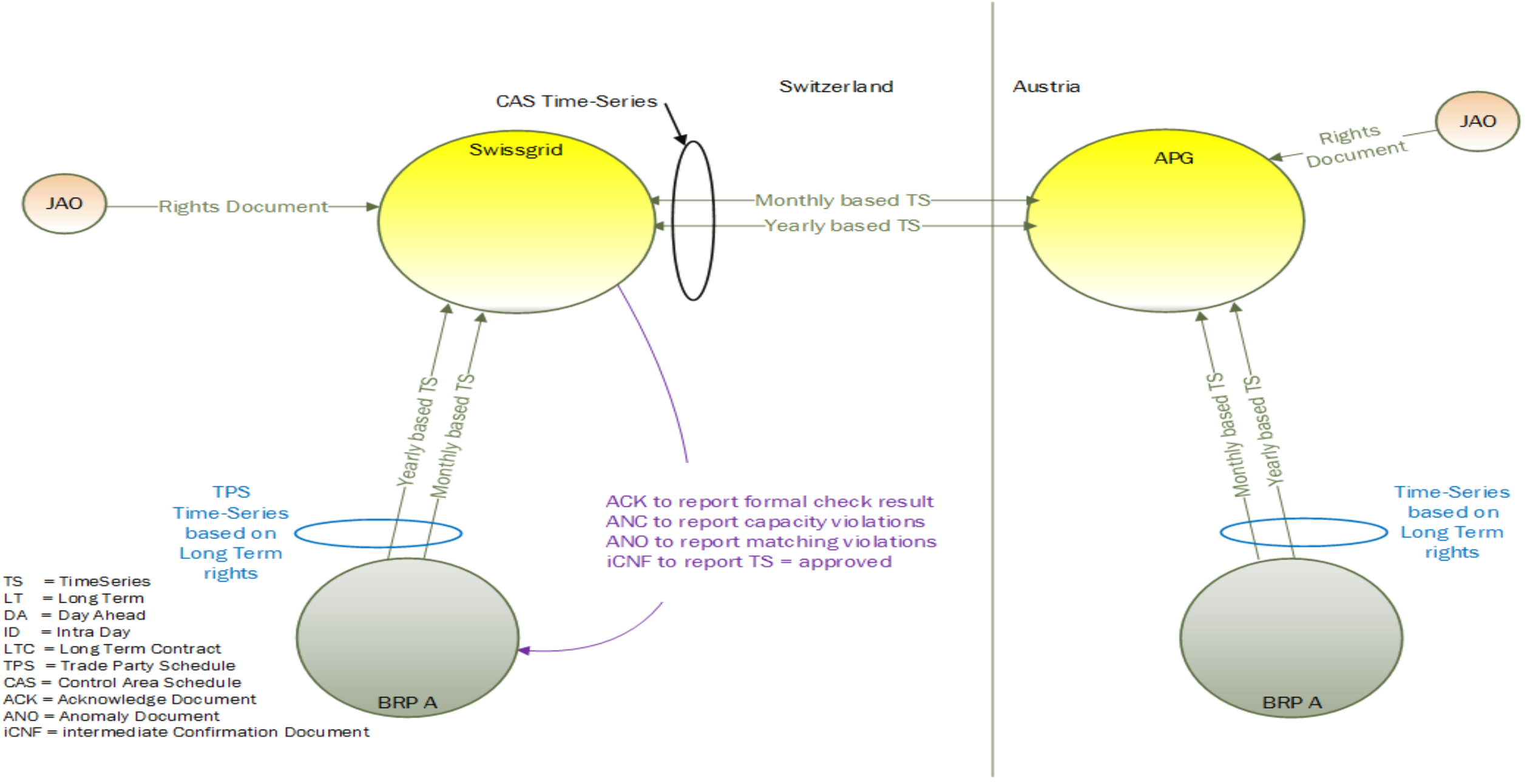




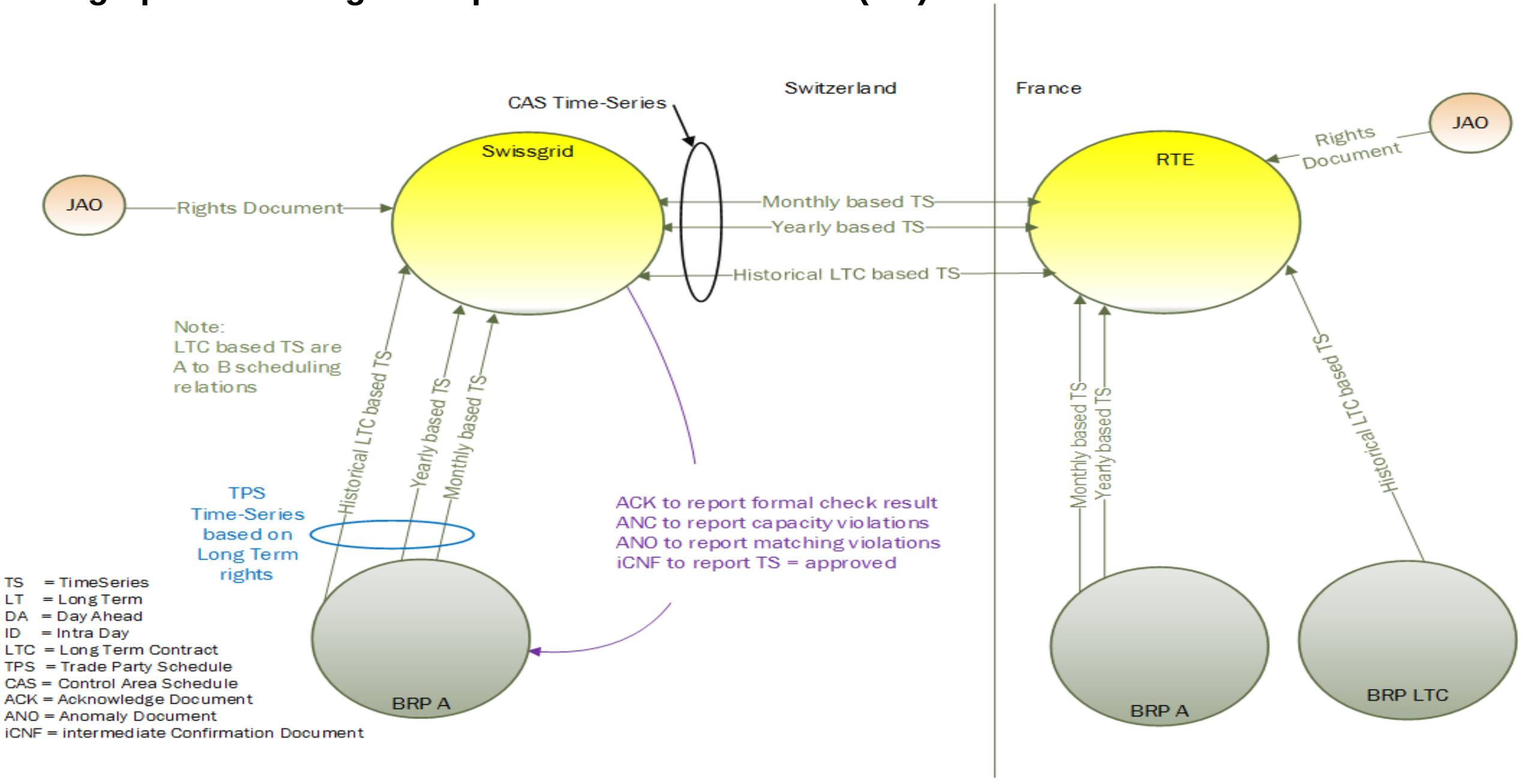




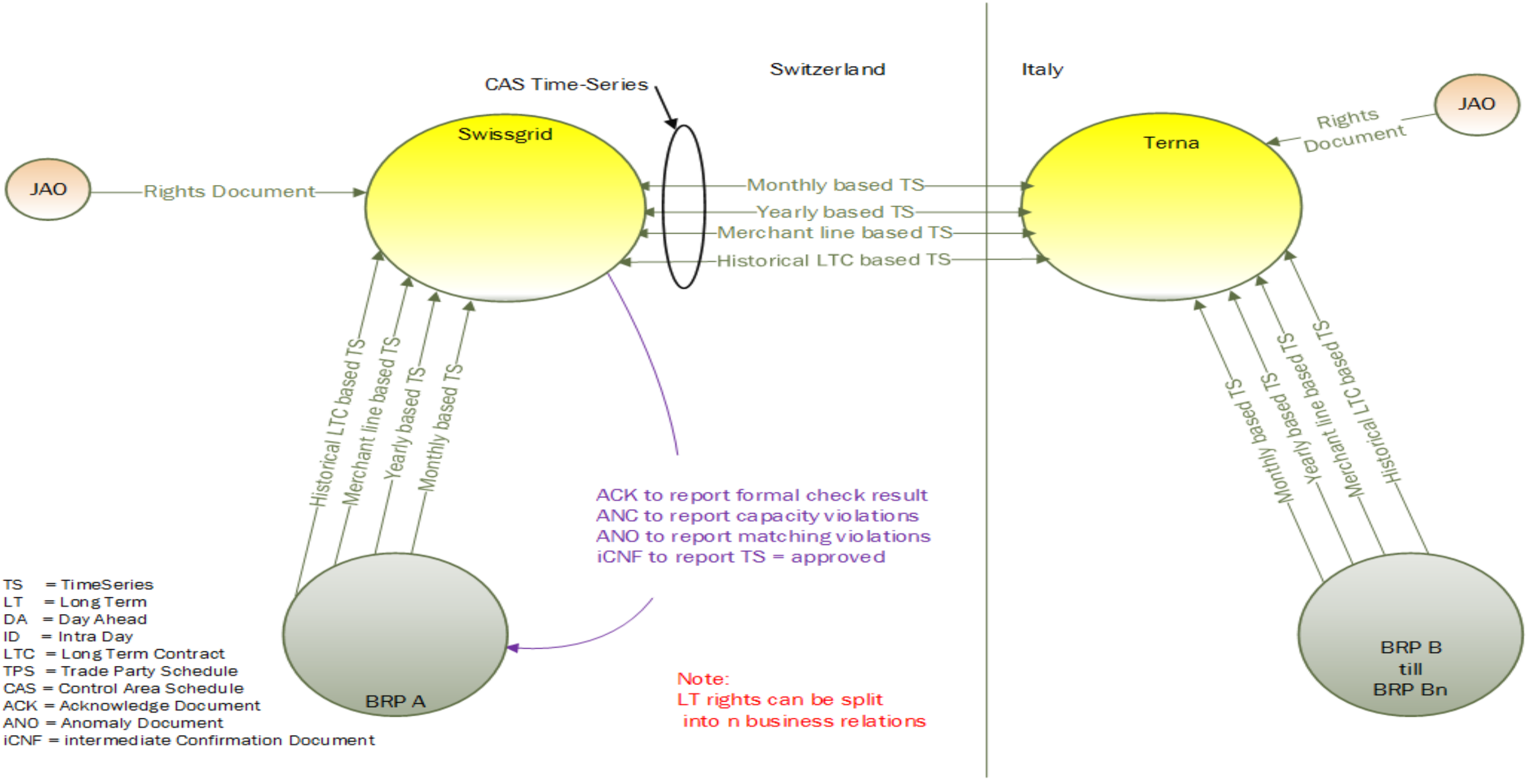
Targetphase – Long Term process on all borders (2/4) – Austria



Targetphase – Long Term process on all borders (3/4) – France

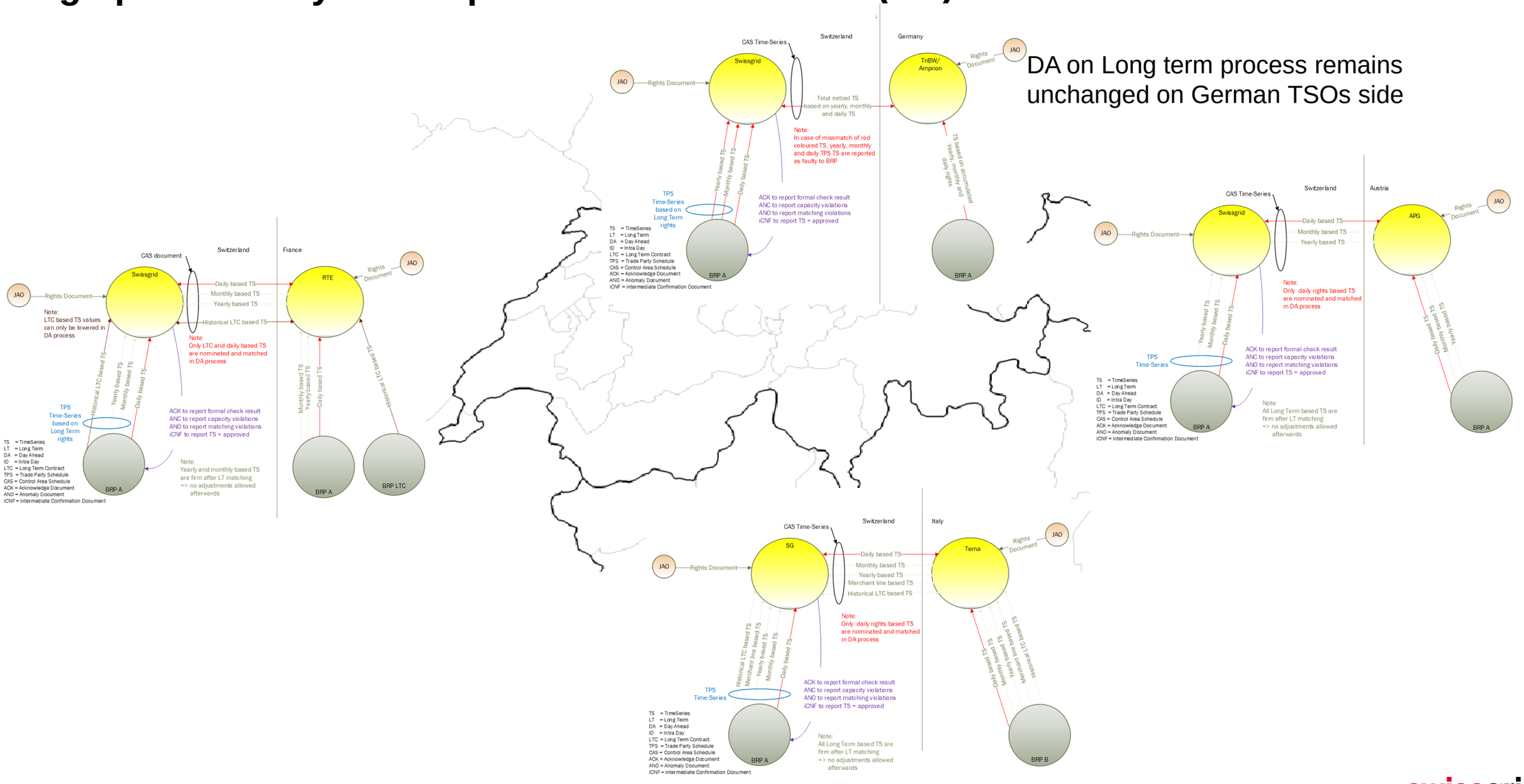


Targetphase – Long Term process on all borders (4/4) – Italy



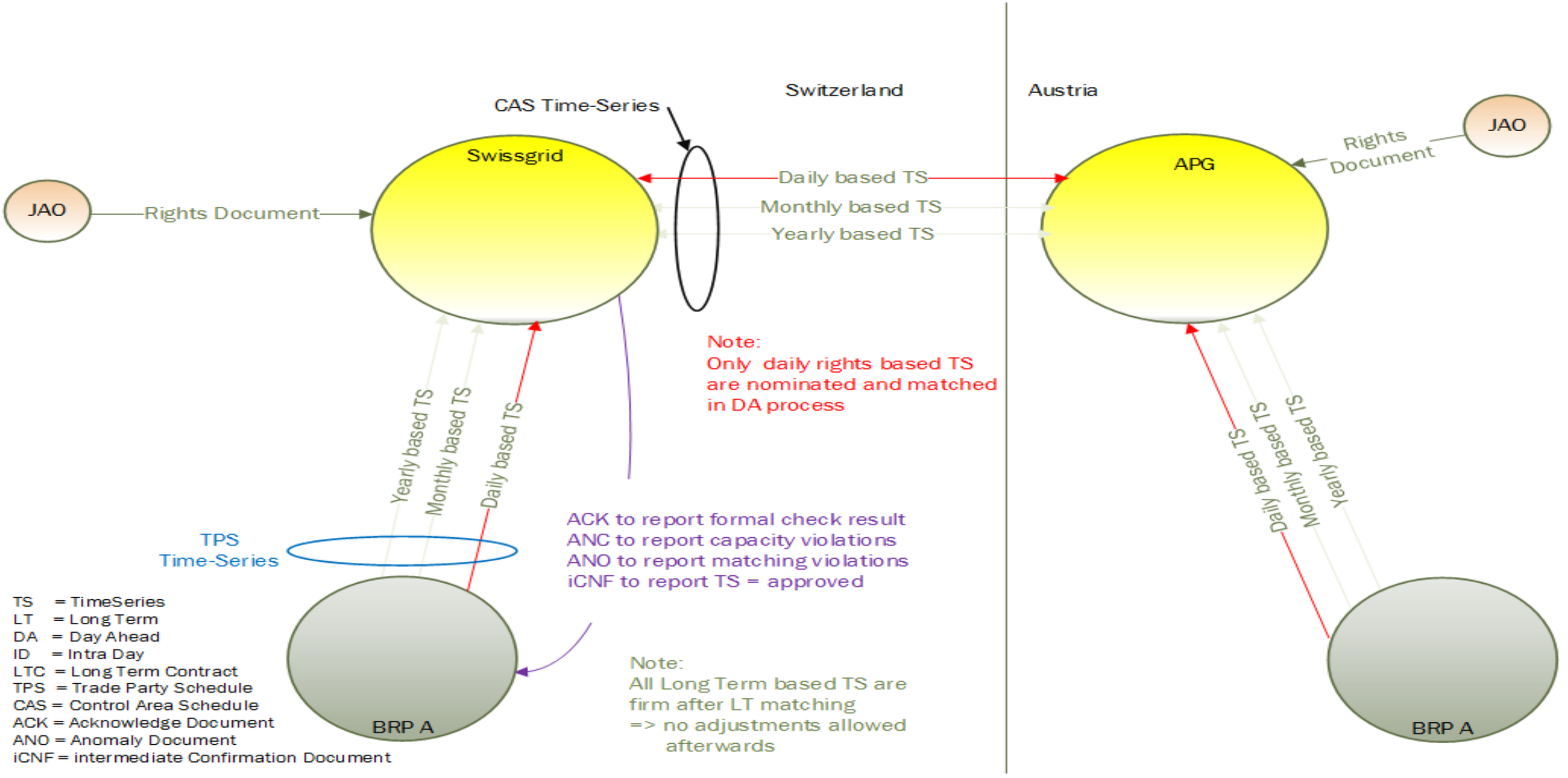
Targetphase – Day Ahead process on all borders (1/5) - Introduction

DA on Long term process remains unchanged on German TSOs side

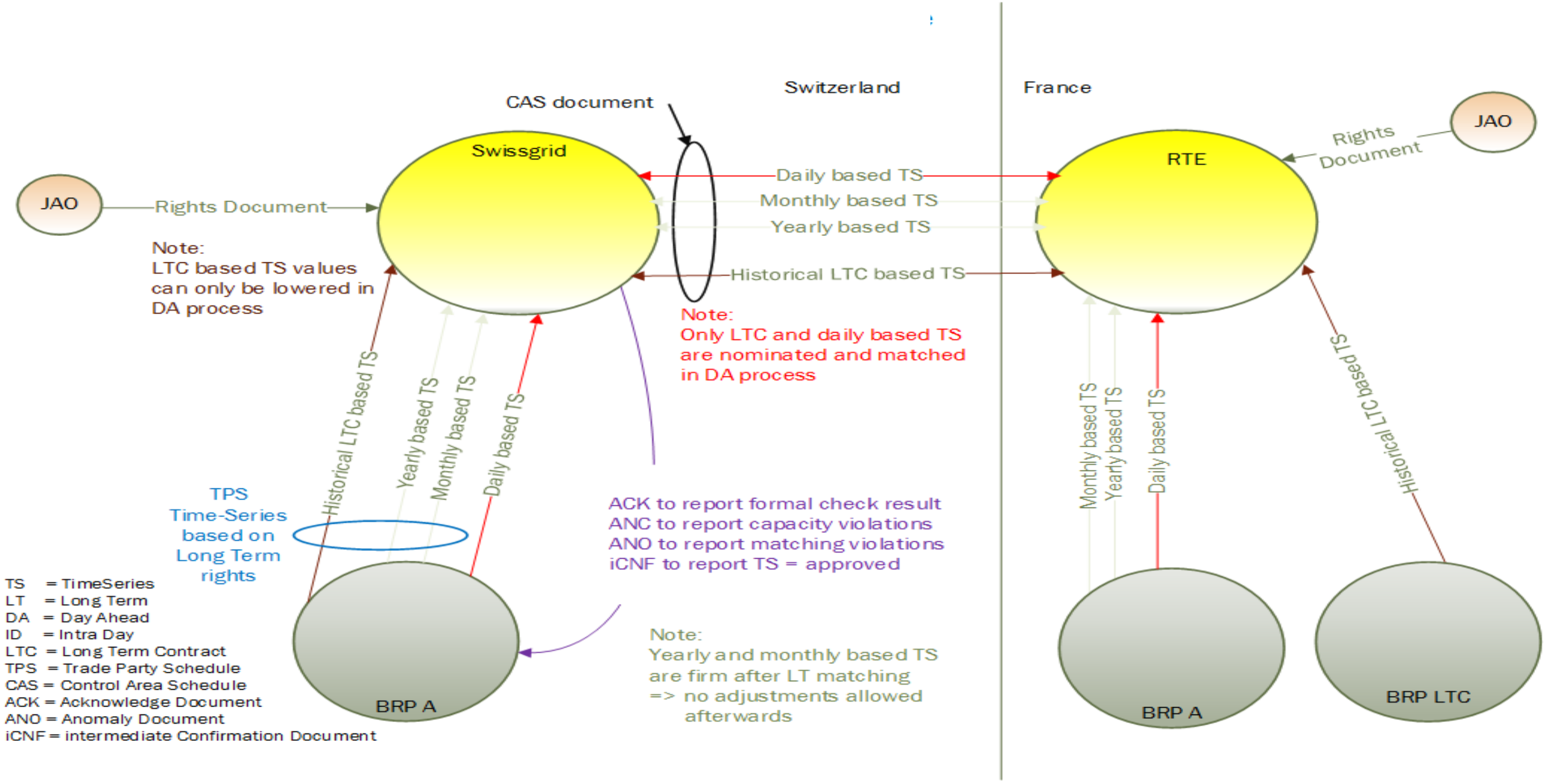


swissgrid

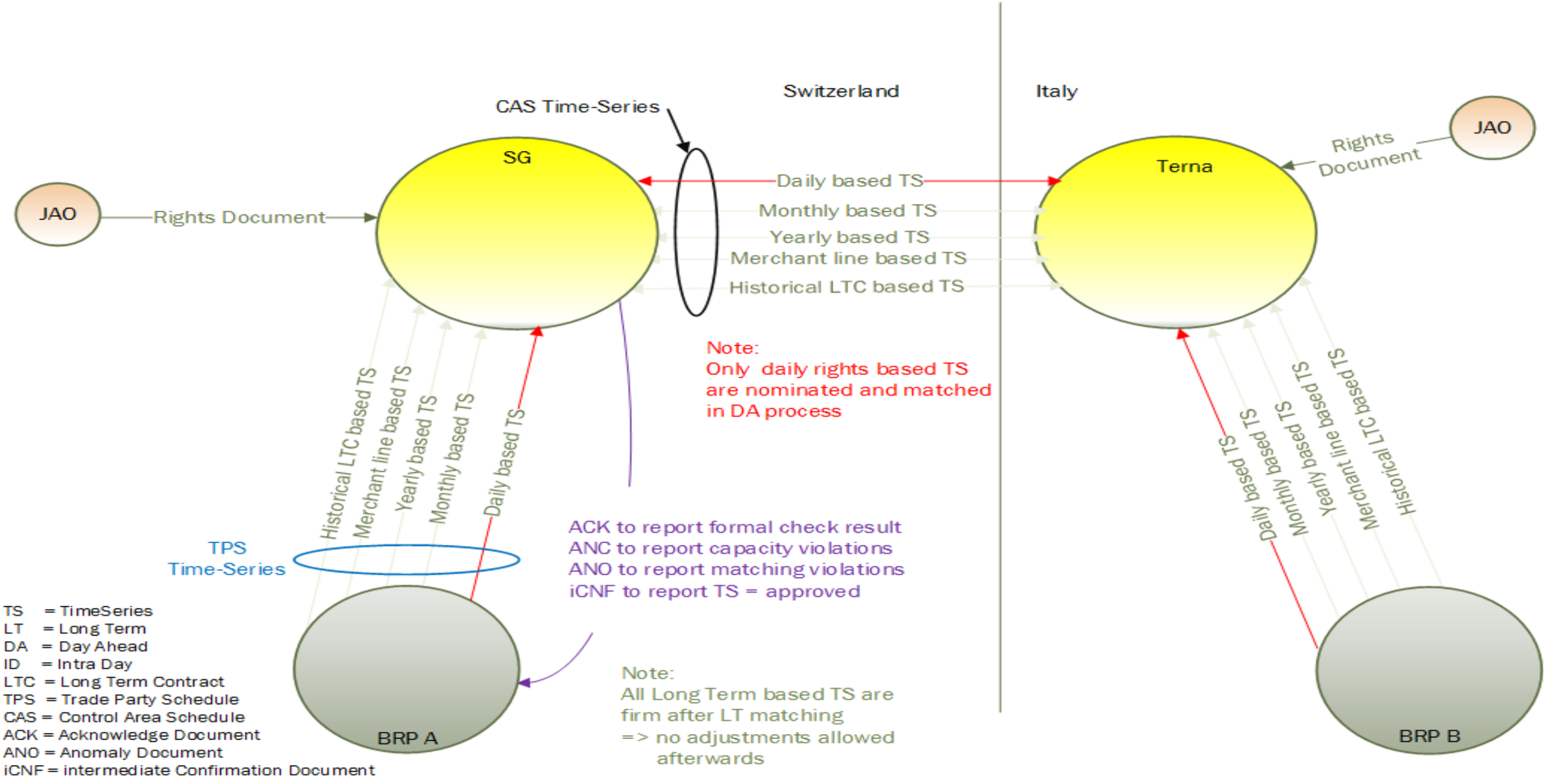
Targetphase – Day Ahead process on all borders (2/5) – Austria



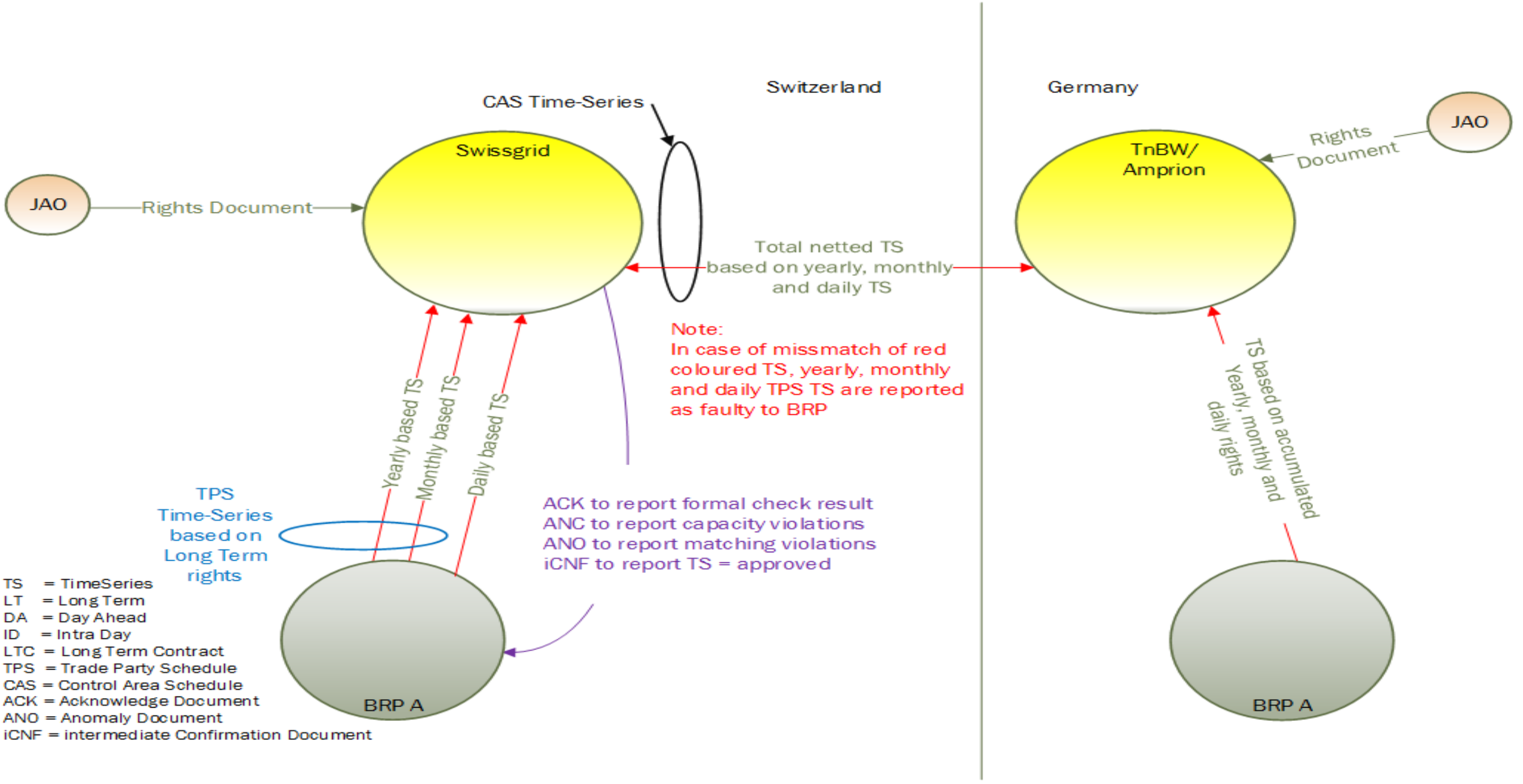
Targetphase – Day Ahead process on all borders (3/5) – France



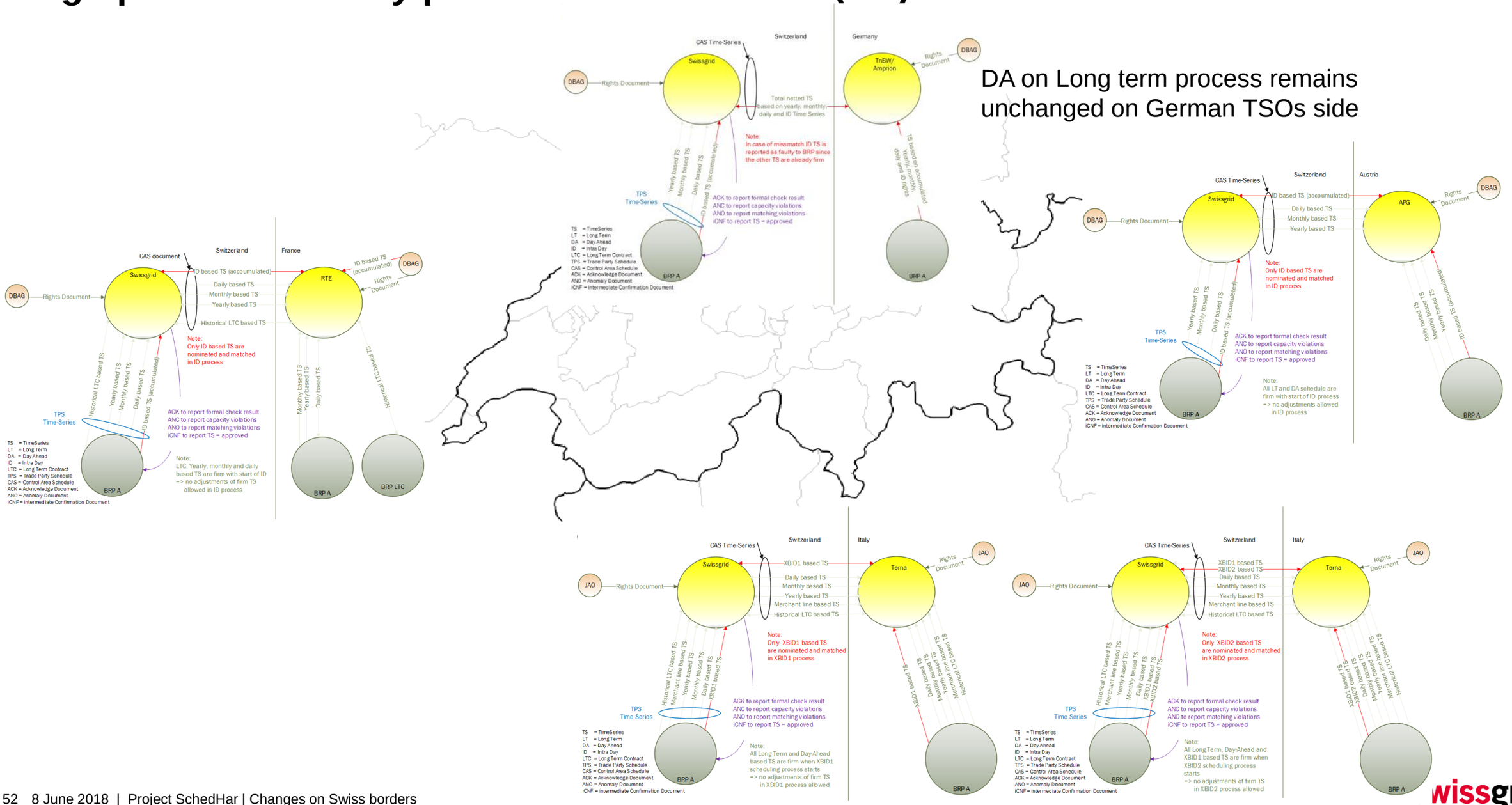
Targetphase – Day Ahead process on all borders (4/5) – Italy



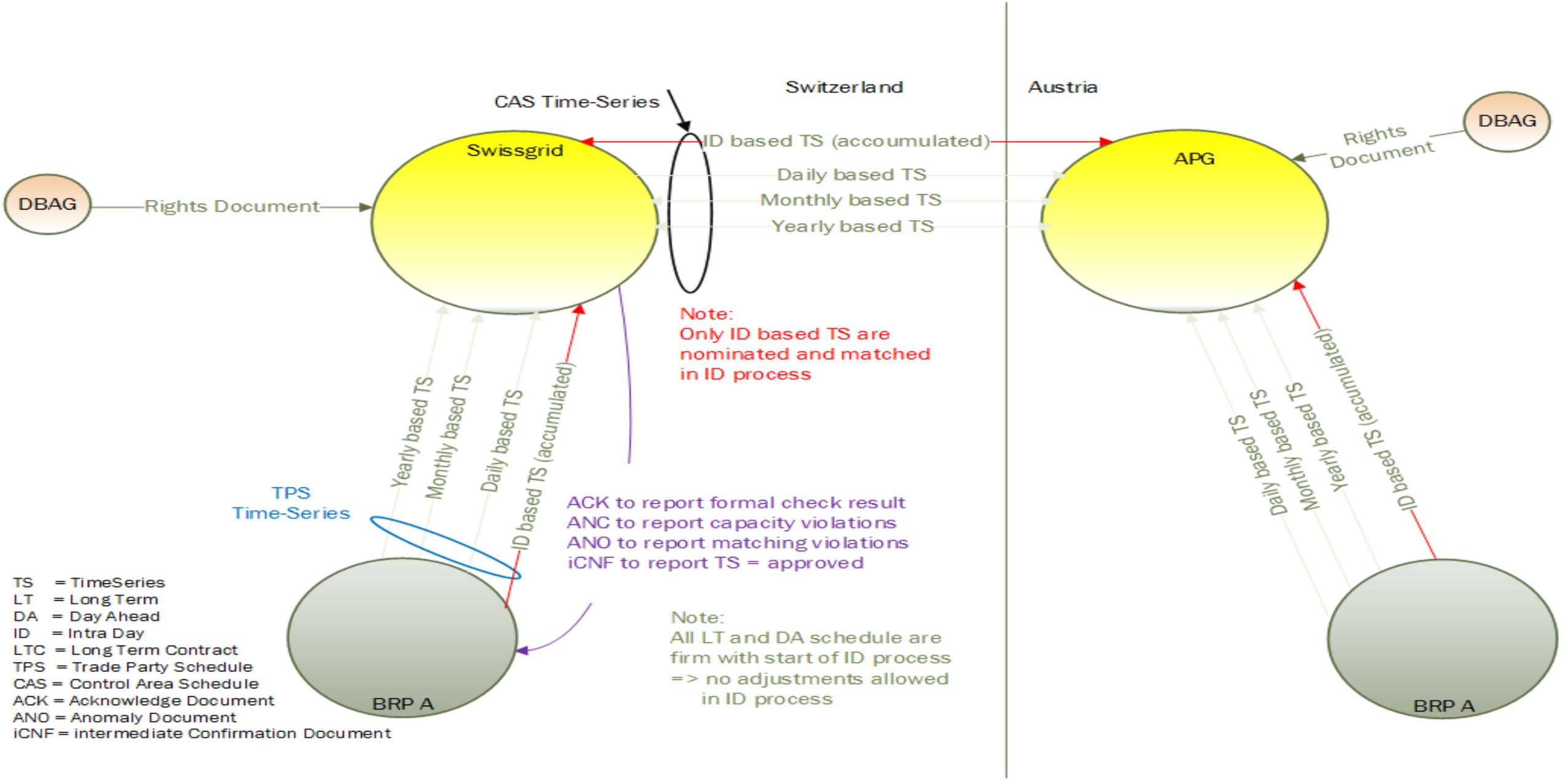
Targetphase – Day Ahead process on all borders (5/5) – Germany



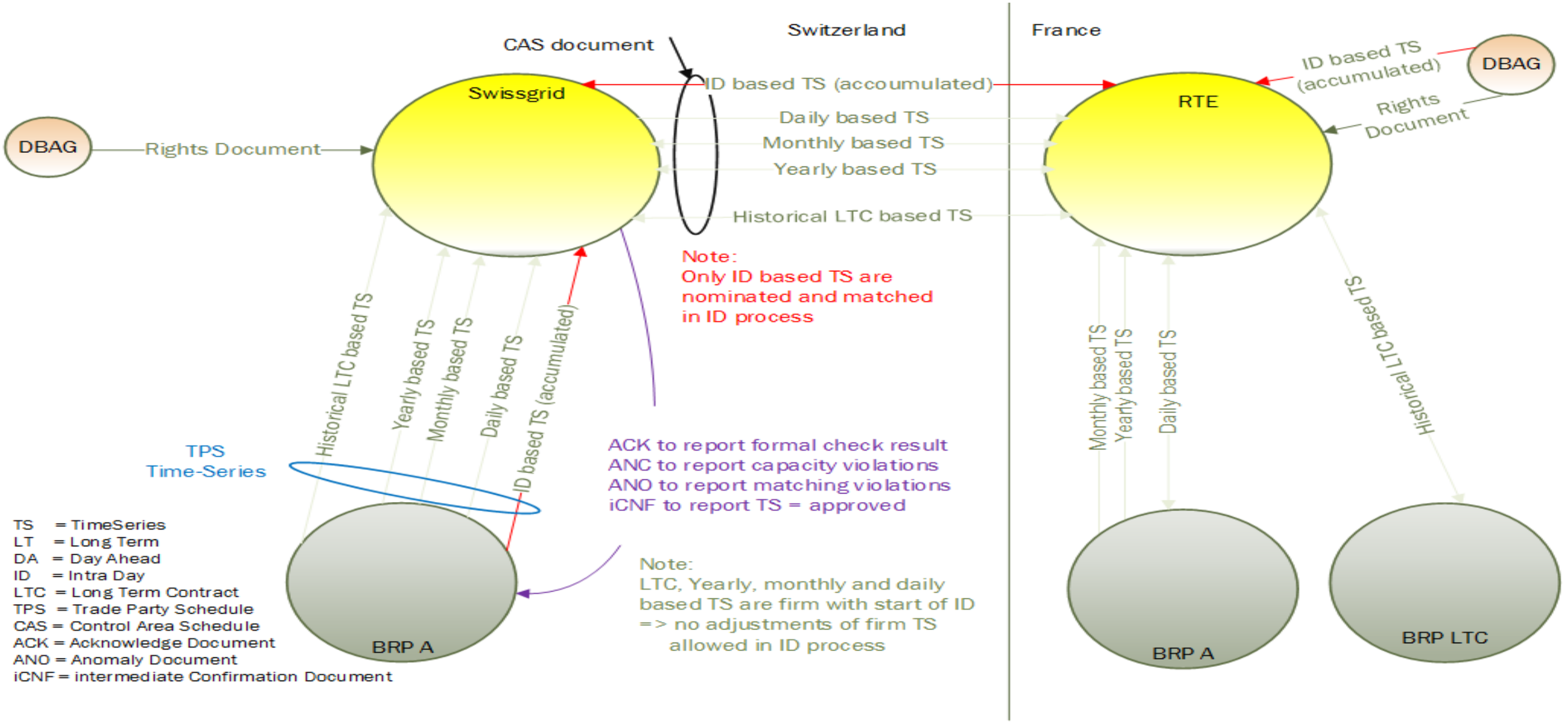
Targetphase – Intraday process on all borders (1/6) - Introduction



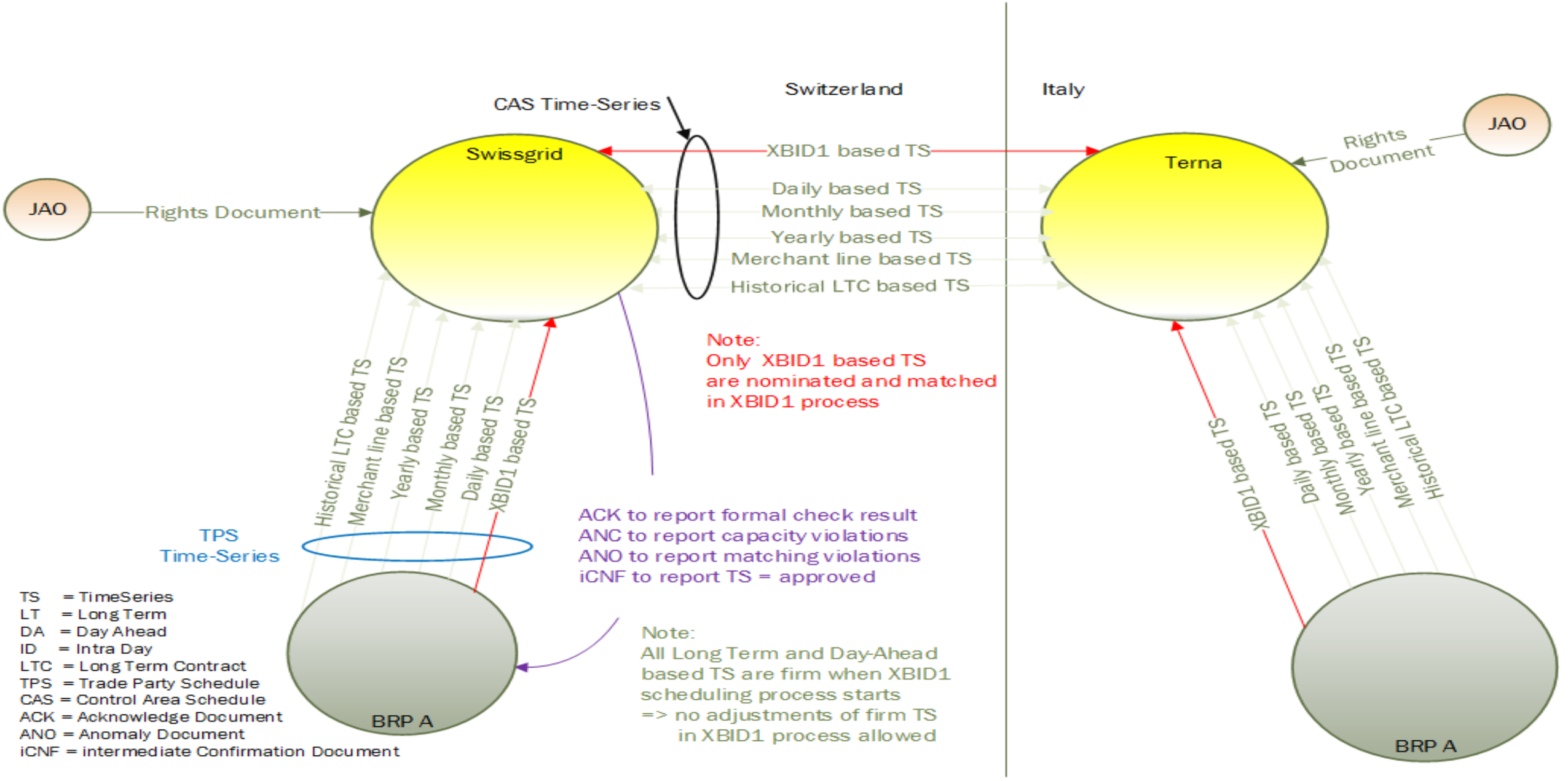
Targetphase – Intraday process on all borders (2/6) - Austria



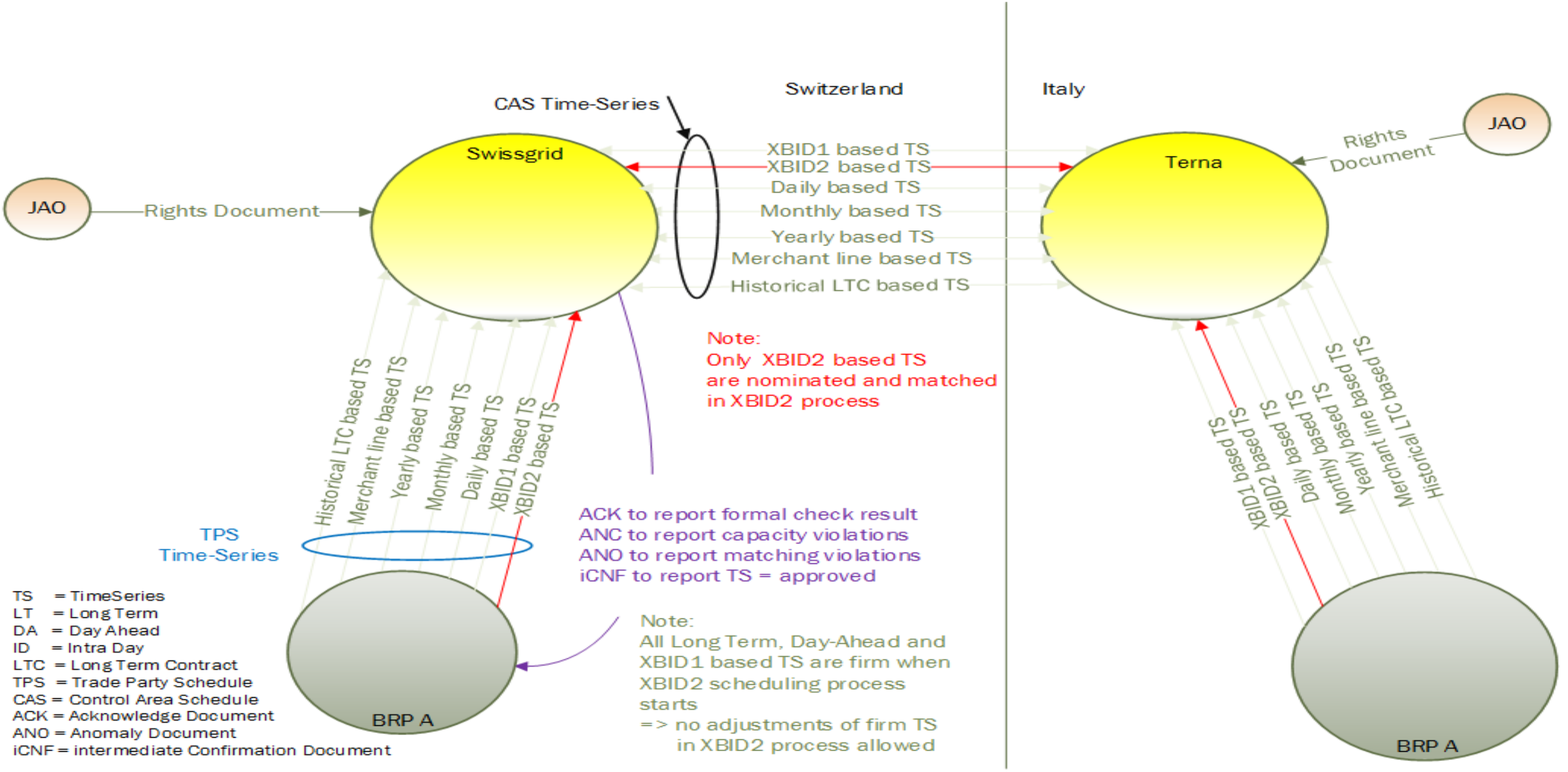
Targetphase – Intraday process on all borders (3/6) - France



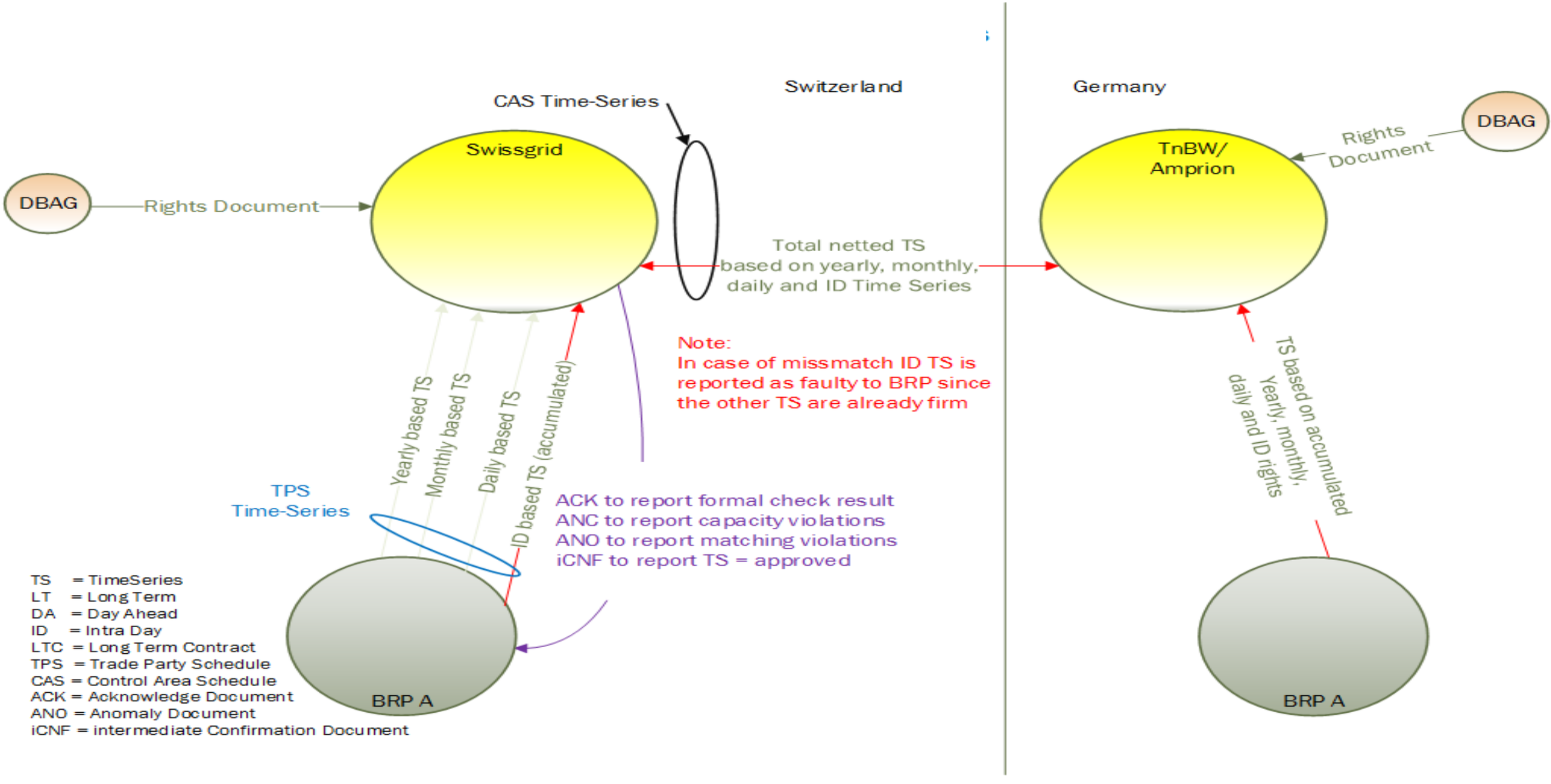
Targetphase – Intraday process on all borders (4/6) – Italy, XBID 1



Targetphase – Intraday process on all borders (4/6) – Italy, XBID 2



Targetphase – Intraday process on all borders (4/6) – Germany



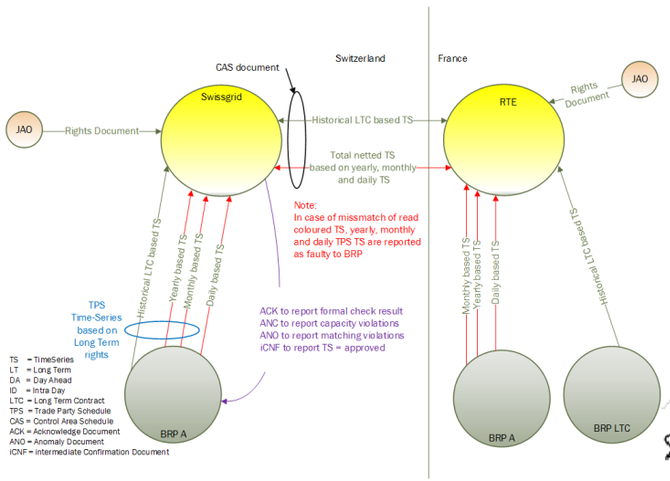
Transitionphase – Long Term process

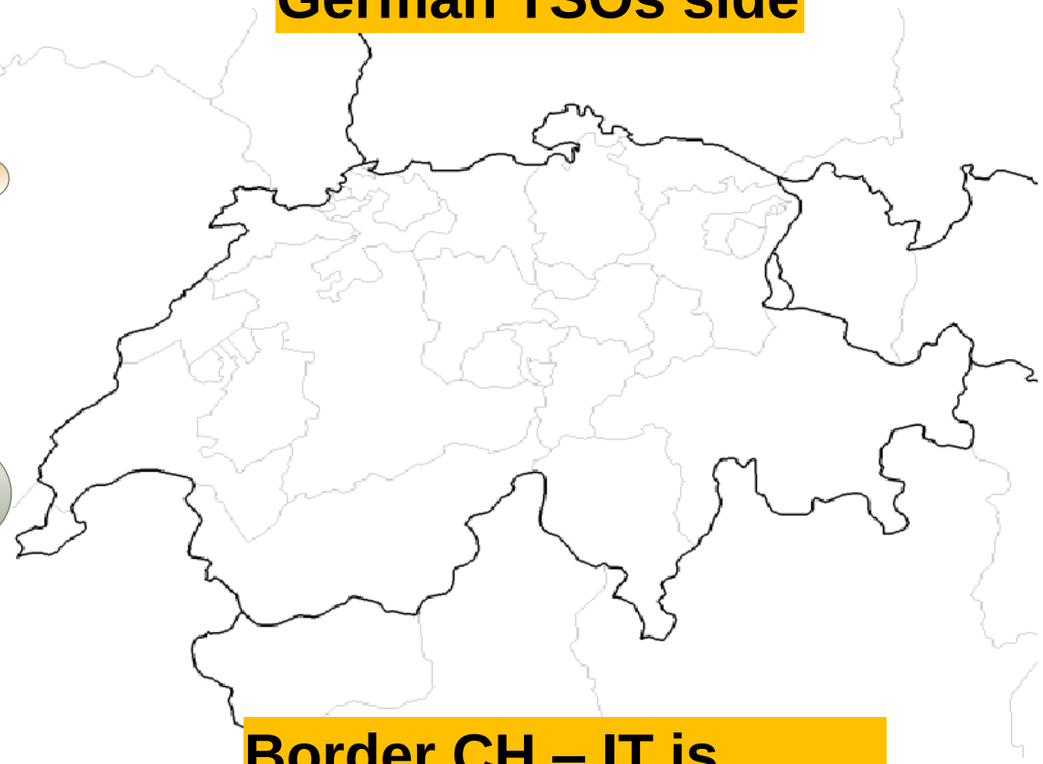
- **After Go Live of first border CH – IT there is an transition phase for the Long term processes on the other CH borders**
  - No Long term matching on following borders
    - CH – FR
    - CH – AT
    - CH – DE

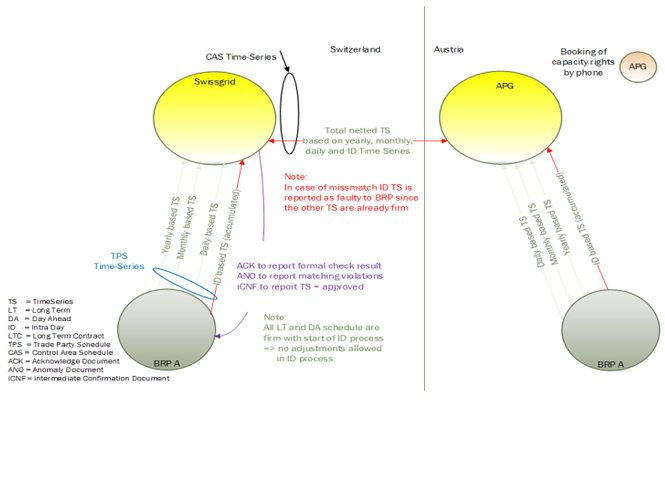
swissgrid

Transitionphase – Day Ahead process on all borders (1/3) - Introduction

NO CHANGE on German TSOs side



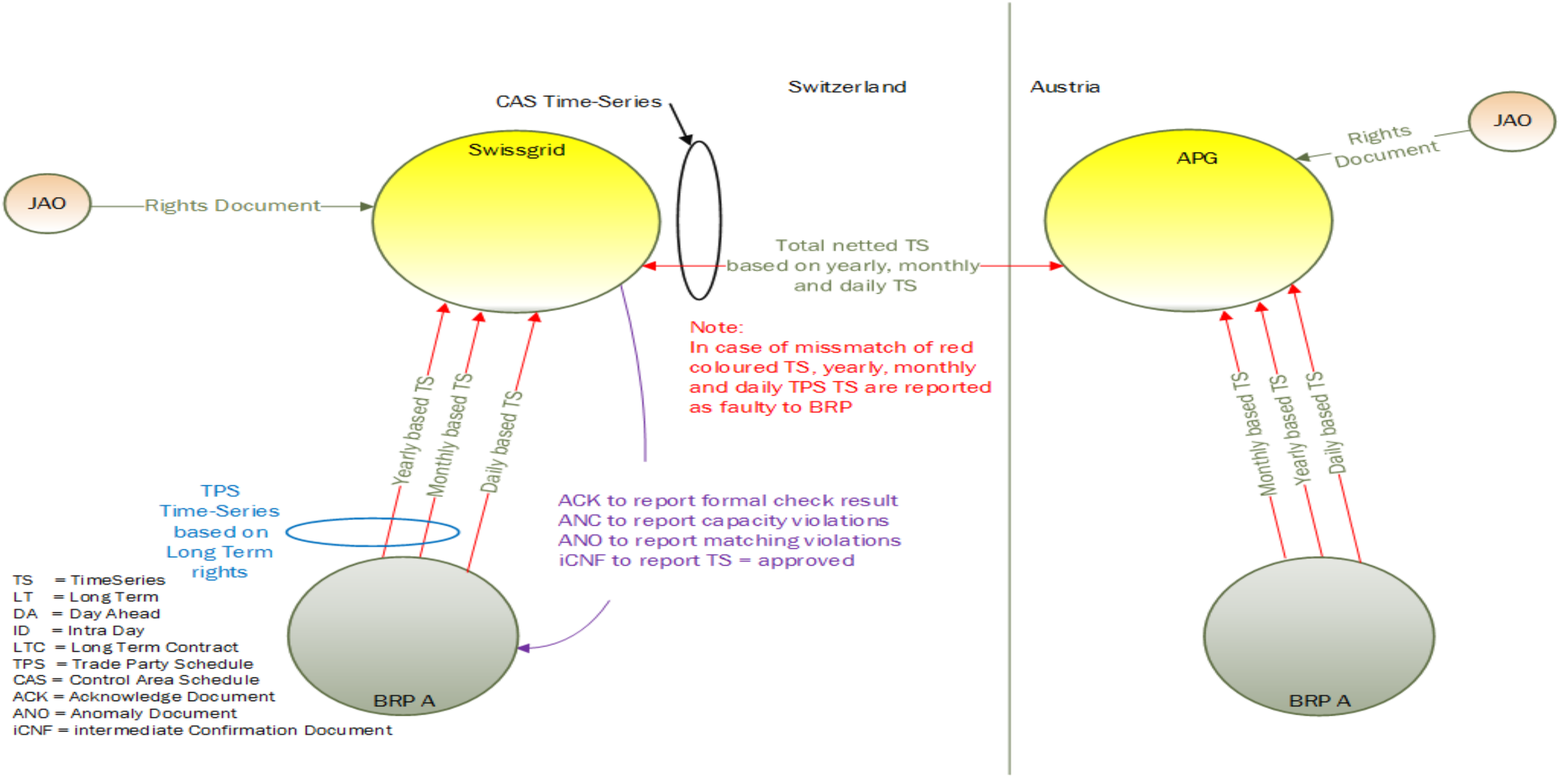




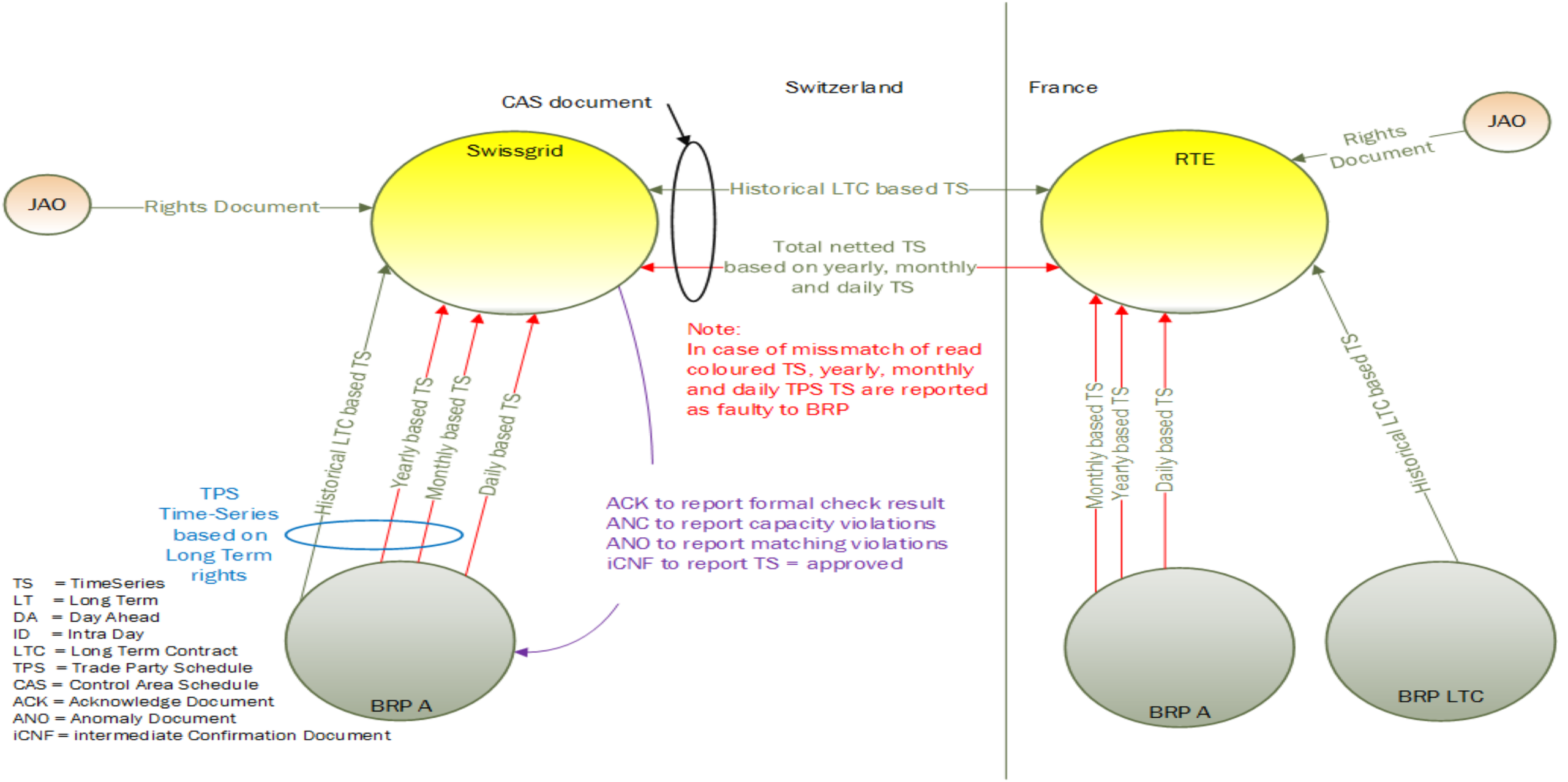
Border CH – IT is already in target phase

swissgrid

Transitionphase – Day Ahead process on all borders (2/3) - Austria

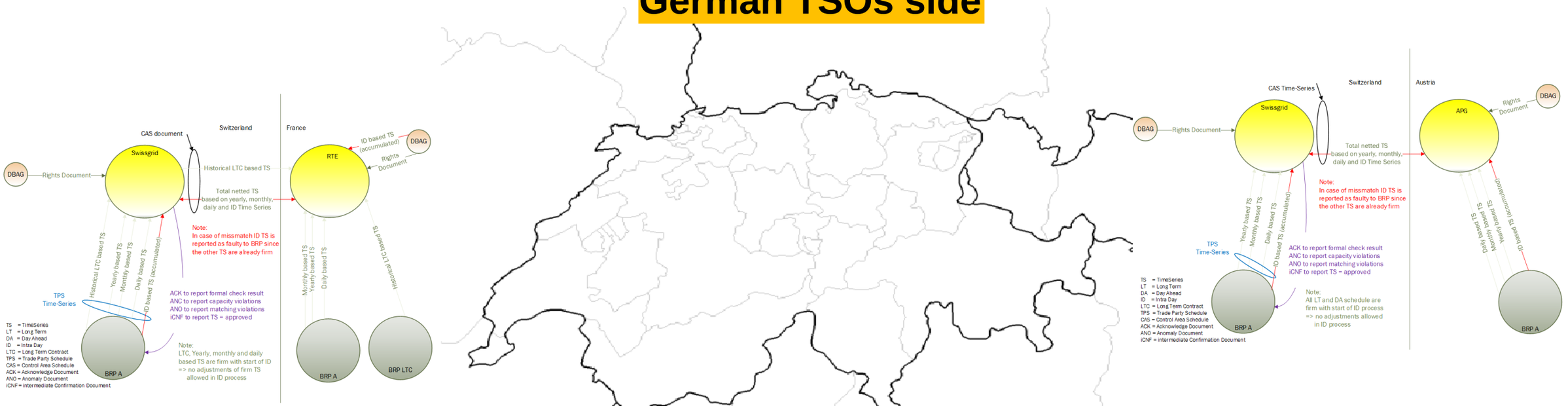


Transitionphase – Day Ahead process on all borders (3/3) - France



Transitionphase – Intra Day process on all borders (1/3) - Introduction

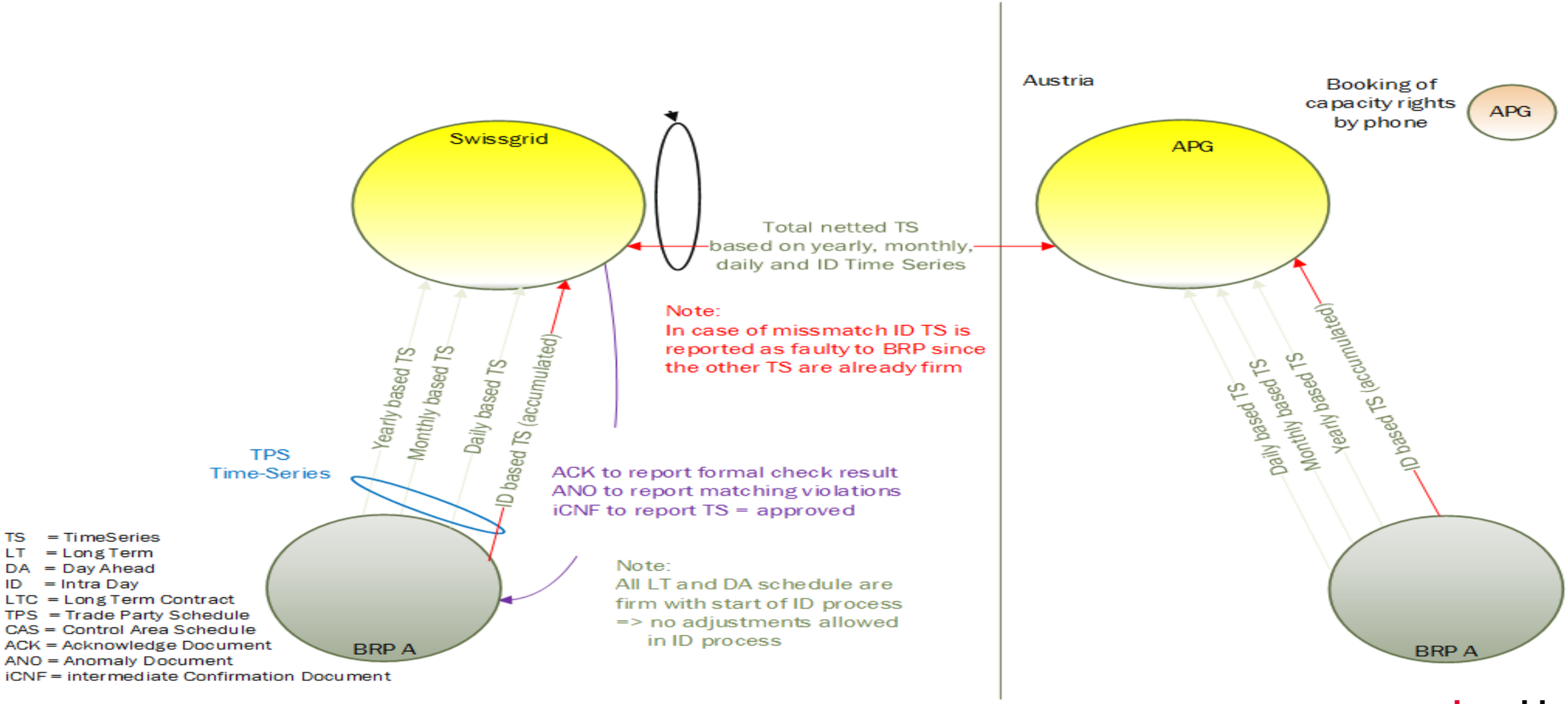
NO CHANGE on German TSOs side



Border CH – IT is already in target phase

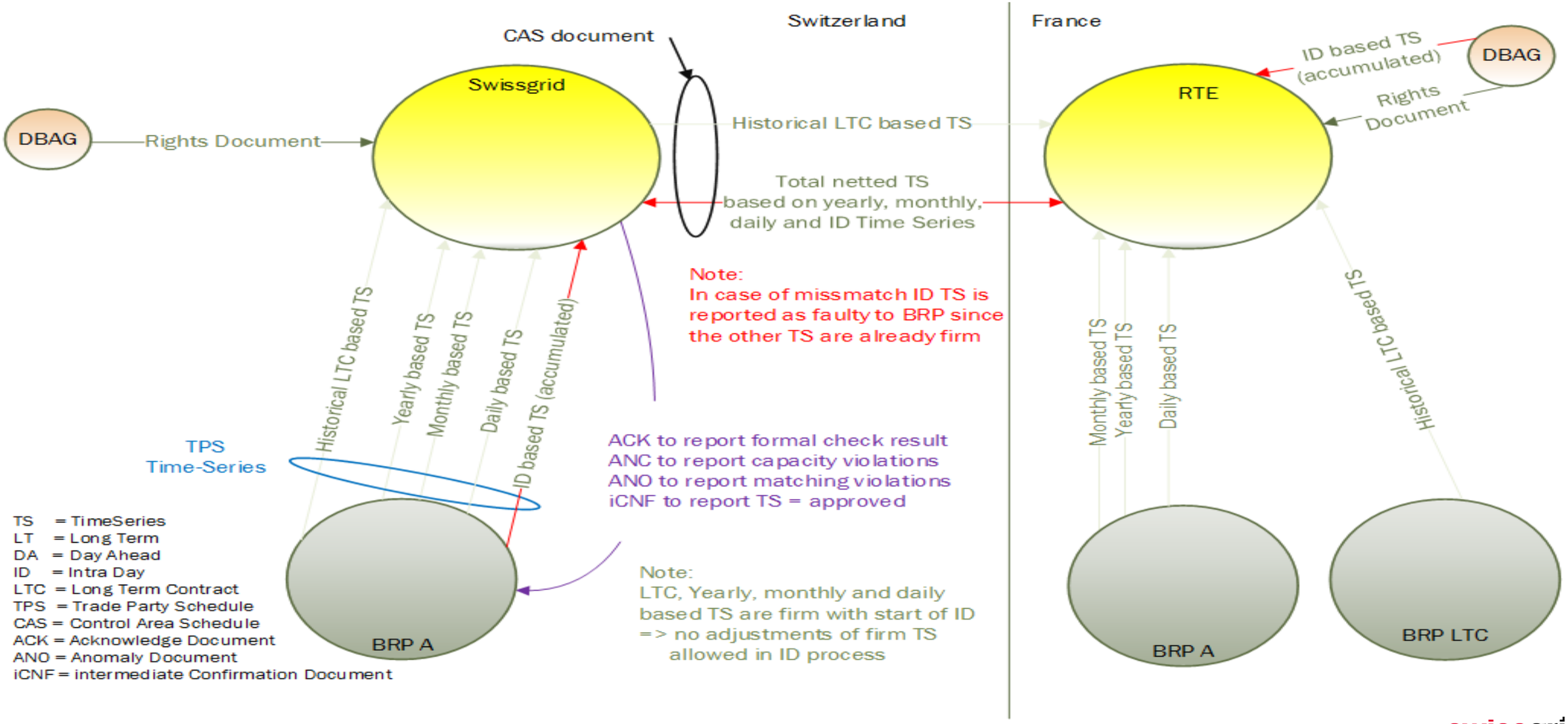
swissgrid

Transitionphase – Intra Day process on all borders (2/3) - Austria



swissgrid

Transitionphase – Intra Day process on all borders (3/3) - France



swissgrid