

# Market System Project Update and SFT Description

SO Industry Workshops  
16-20 April 2007

Ray Hardy

TRANSPower



SYSTEM OPERATOR

# Agenda

- update on MSP
- SFT description
- quality assurance
- feedback from the workshop

# 1: Update on MSP: benefits

- foundation for delivering government policy outcomes (wind, DSP etc)
- maintain prudent and efficient operation of power system
- maximises grid utilisation
- delivers world class ISO service.

# 1: Update on MSP: Timeline

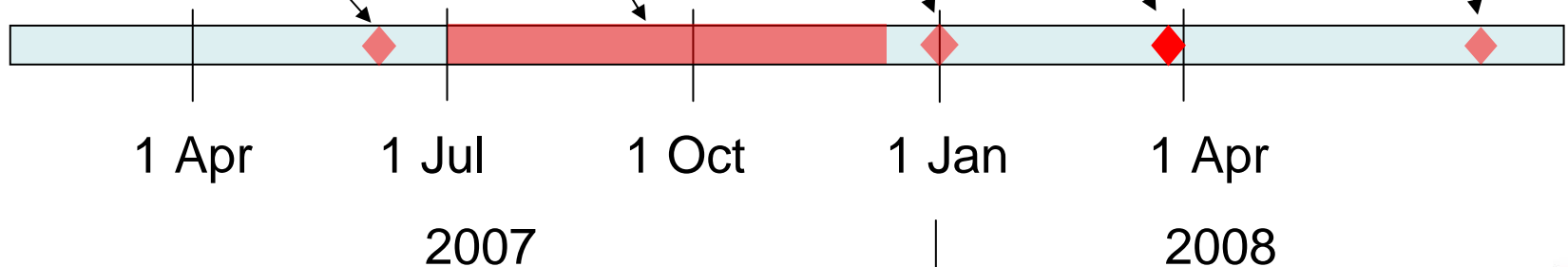
Testing phases begin  
June 2007

Interface testing  
Q3,4 2007

Training begins  
January 2008

Go live March 2008

SFT go live  
second half  
2008



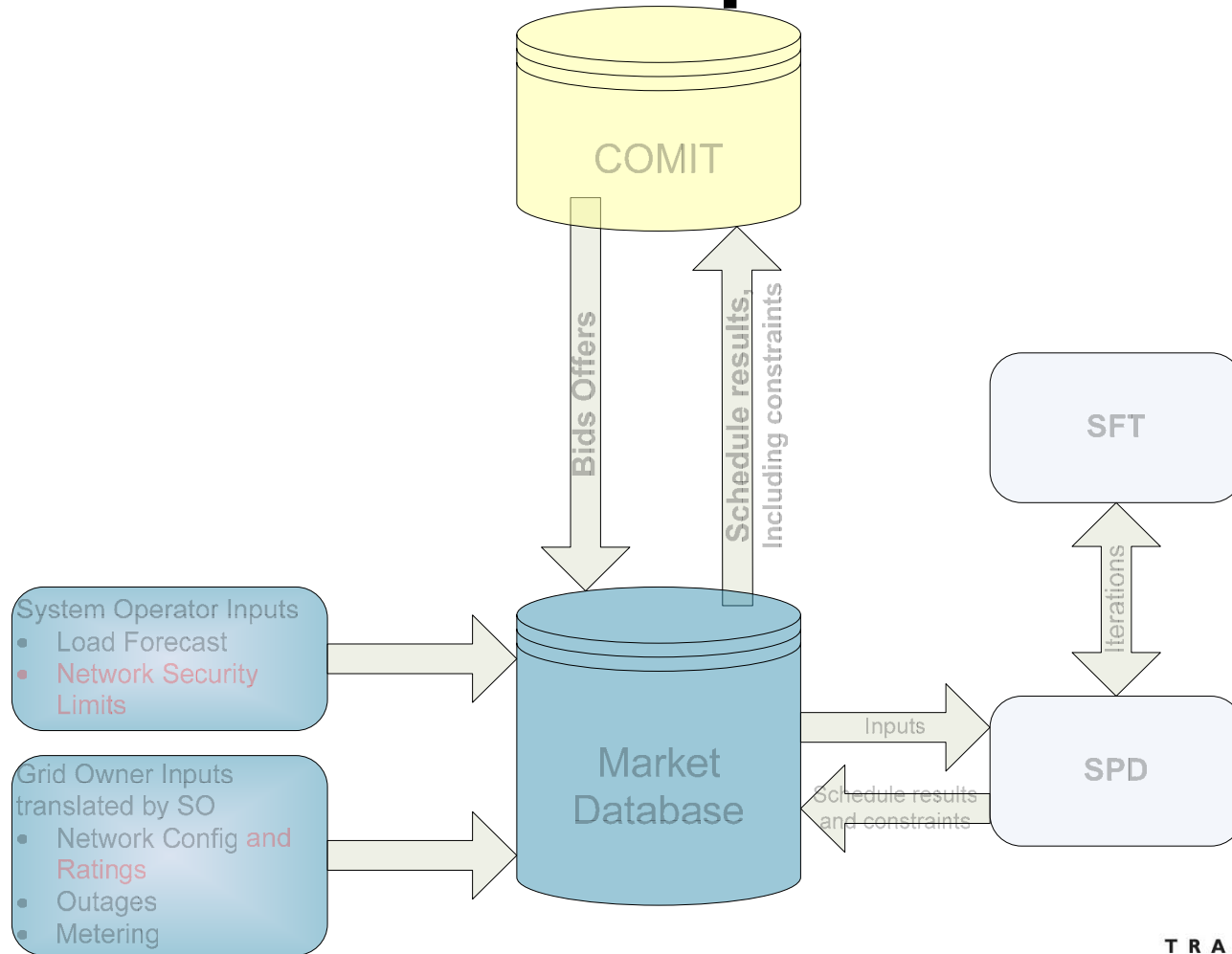
## 2: SFT Description: high level overview

- Areva application “Simultaneous Feasibility test”
- constraints applied to maintain security
- industry standard AC load flow programme
- same number of security constraints
- improved accuracy and market efficiency.

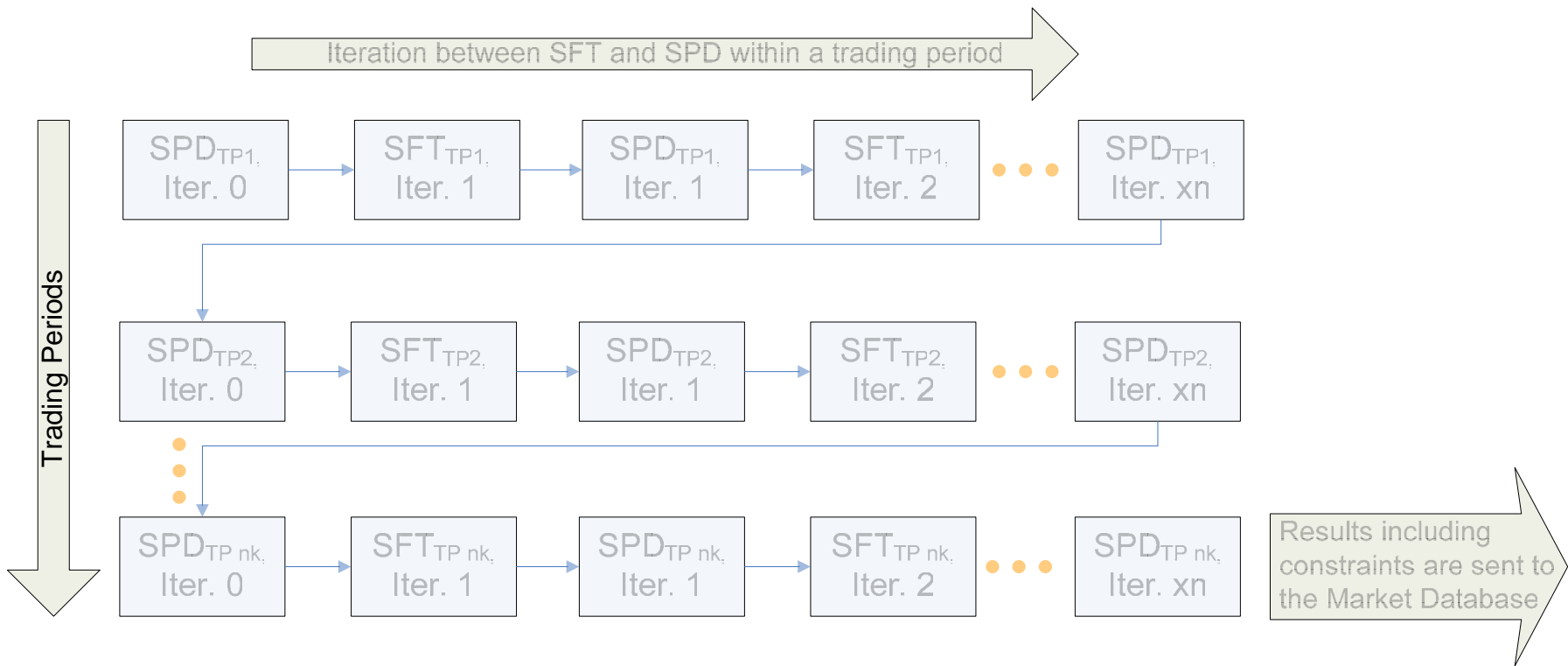
## 2: SFT Description: consultation

- Constraint Publication Forum (CPF) set up in early 2006 to oversee the SFT implementation
- open industry invitation to contribute to the CPF
- minutes and papers available on SO web site <http://www.transpower.co.nz/?id=6343>
- implementation consistent with CPF work.

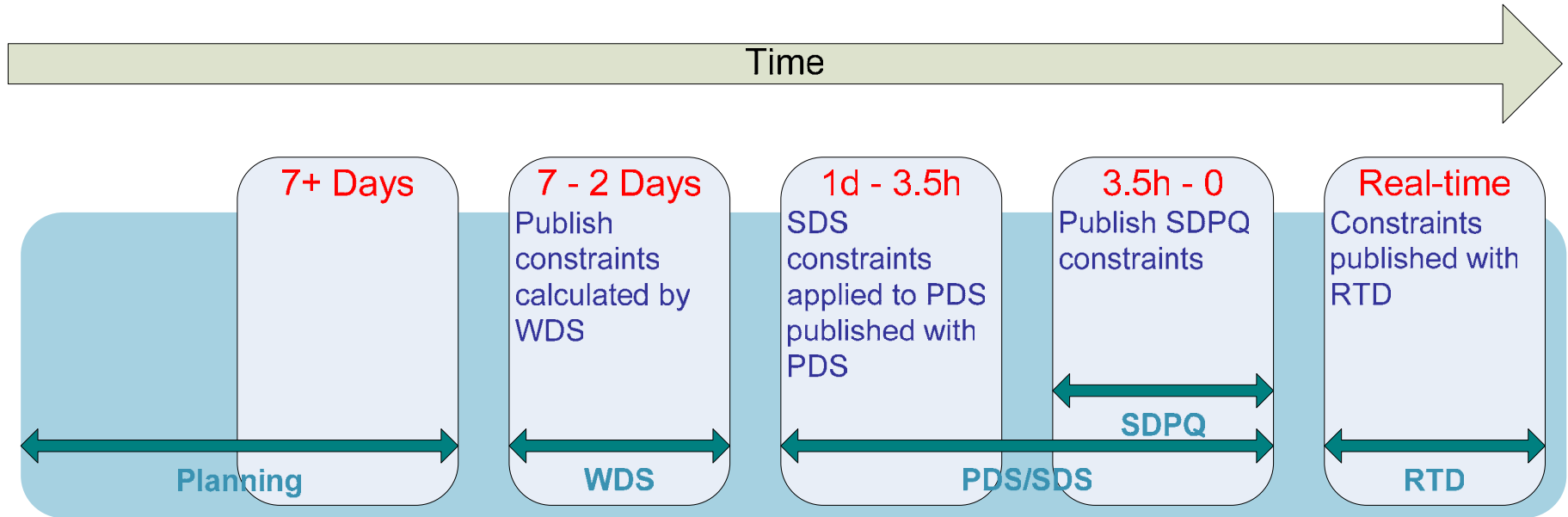
# 2: SFT Description: concept



# 2: SFT Description: iterations with SPD



# 2: SFT Description: schedules



# SFT: Publication 1

Schedule	Description	Timing	Constraint 1	
			Name	%
WDS	will be run every day at 1am. T1 of the next day for a full 6 days.	Day 7	1.34*TKU_WKM1.1+ 0.32*TKU_WKM2.1<120	90
		Day 6...	1.36*TKU_WKM1.1+ 0.31*TKU_WKM2.1<119	88
		...Day 2	1.34*TKU_WKM1.1+ 0.32*TKU_WKM2.1<120	85
SDS	Constraints that are within a fixed percentage of binding in the SDS schedules will be published (proposed to be 85%).	1pm day before	1.38*TKU_WKM1.1+ 0.29*TKU_WKM2.1<117	85
		3pm day before	1.36*TKU_WKM1.1+ 0.31*TKU_WKM2.1<119	84
		1/2 hour before constraint is required	1.34*TKU_WKM1.1+ 0.32*TKU_WKM2.1<120	82
PDS	The constraints calculated by the SDS schedule are applied to the PDS schedule.	Same as SDS	1.38*TKU_WKM1.1+ 0.29*TKU_WKM2.1<117	81

# SFT: Publication 2

Schedule	Description	Timing	Constraint 1	
			Name	%
SDPQ	The System Operator will publish (in COMIT) a list of security constraints that are within a fixed percentage of binding in the SDPQ schedules.	3 hours in advance	Will be the same as the SDS results  RTD and Pricing use these constraints	83
		2 1/2 hours in advance		82
		1/2 hour before constraint is required in real time		82
RTD	Uses the constraints calculated from the last applicable SDPQ schedule. If constraints are modified after the last applicable SDPQ schedule then changes will be published with the RTD schedule.		1.34*TKU_WKM1.1+ 0.32*TKU_WKM2.1<129 RHS Changes normally or Ad hoc updates for major events	94

## 2: SFT Description: specific schedules

- current system: limits applied to time periods
- in SFT world:
  - manual constraints continue
  - limits stored in database
  - if SFT **not** selected, use last calculated SFT limits
  - if SFT selected, use the last calculated SFT limits to tune solution.

## 2: SFT Description: profiles

- voltage profiles
- power factor profiles
- capacitor switching profiles.

# 3: Quality assurance

- full capability of existing system
- real time system will test SFT
- can turn off SFT entirely or in part
- full BPR process followed
- fully tested
- possible staggered delivery.

# 4: Feedback from workshop

- market system naming changes
- SFT binding percentage set at 85%
- information requirements
  - papers on SO web site
  - further workshop end of 2007
  - ??