

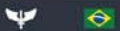


**Departamento  
de Controle do Espaço Aéreo**  
Department of Airspace Control



# BRAZIL EXERCISE

RLA/06/901 – Taller : 11-13/MAIO/2021  
Captain Almeida / Statistical Adriano





# OVERVIEW

## Exercise assumptions:

- AN-SPA tool use
- Short-term 2021-2024
- KPA: Efficiency, Capacity, Predictability
- Geographic scope: Airport, TMA, en-Route
- Filling Vol. III tables

# VOL III - TABLES



## GO TO TABLES AND AN-SPA tool

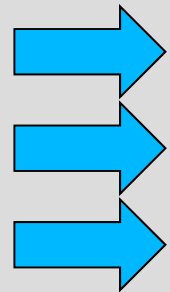
- Exercise flow



## KPIs (Links utilizados)

### Tools and dashboards:

- **Dashboards KPI (Site de Performance)**
- **Turnaround e Tempo de Taxi (Dashboard)**
- **Performance Report (Site Performance)**
- **Ferramentas em tempo real (CGNA – Salão Operacional)**
- **Capacitação (Curso de Indicadores – ATM047)**
- **GT de Indicadores do Brasil (MCA 100-22 – Site de Perf.)**
- **Próximos passos**



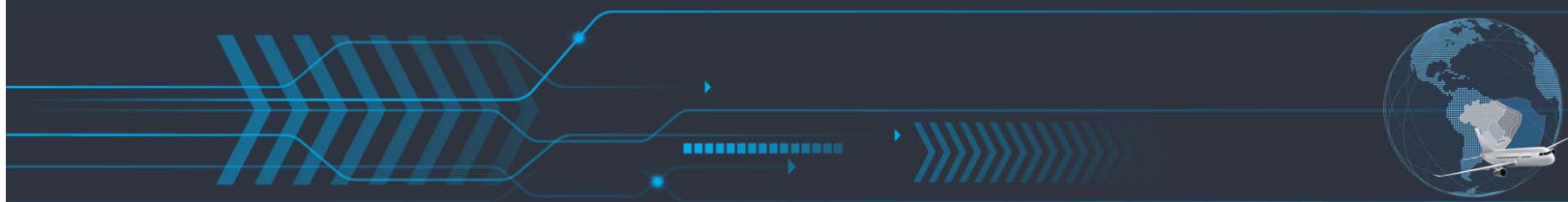
# Thank you!



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*Asas que protegem o País*



[WWW.DECEA.GOV.BR](http://WWW.DECEA.GOV.BR)

ID	SCOPE GEO	NAME	TERM	KPA	QUESTIONS
765	TMA	SBXP - TMA SÃO PAULO	SHORT TERM	EFFICIENCY	IS THE AVERAGE TRANSIT TIME THROUGH THE TMA GREATER THAN THE UNIMPEDED TRANSIT TIME? (YES)
		SBWJ - TMA RIO DE JANEIRO			IS THE HOLDING TIME ACCEPTABLE? (YES)
		SBWH - TMA BELO HORIZONTE			ARE THERE CLIMBING CONSTRAINTS IMPOSED BY ATM? (YES)
770	AIRPORT	SBBR	SHORT TERM	EFFICIENCY, CAPACITY, PREDICTABILITY	IS THE HOLDING TIME ACCEPTABLE? (TACTICAL)
		SBCF			ARE THERE DESCEND CONSTRAINTS IMPOSED BY ATM? (YES)
		SBCG			ARE THEY TACTICAL, SEMI-PERMANENT OR PERMANENT CONSTRAINTS (LEVEL CAPPING)? (PERMANENT)
		SBCY			IS THE AVERAGE TAXI-OUT DURATION GREATER THAN THE UNIMPEDED TAXI-OUT TIME? (YES)
		SBEF			DO THE MAJORITY OF FLIGHTS PUSH BACK WITHIN THE EOBT TOLERANCE WINDOW? (YES)
		SBEJ			ARE THERE ADVERSE CONDITIONS SUCH AS WEATHER, CONGESTION OR STAFFING ERRORS? (YES)
		SBEK			WHEN DO THE TAXI-OUT STOPS TAKE PLACE, BEFORE OR AFTER REACHING THE HOLDING POINT OF THE DEPARTURE RUNWAY? (BEFORE)
		SBEV			IS THE AVERAGE TAXI-IN DURATION GREATER THAN THE UNIMPEDED TAXI-IN TIME? (YES)
		SBEW			ARE THERE PROBLEMS WITH GATE/STAND AVAILABILITY? (YES)
		SBEY			DOES THE DEMAND EXCEEDS THE CAPACITY (ARRIVAL RATE)? (YES)
		SBEZ			IS THE AIRPORT A SCHEDULES FACILITATED AIRPORT (LEVEL 2) OR A COORDINATED AIRPORT (LEVEL 3)? (YES)
		SBFH			IS THERE ATFM OR ANY KIND OF DEMAND/CAPACITY BALANCING PROCESS? (YES)
		SBFJ			IS THE PASSENGERS TERMINAL CONGESTED? (NO)
		SBFK			IS THE APRON CONGESTED? (NO)
		SBFV			ARE THE TAXIWAYS CONGESTED? (NO)
		SBFY			IS THE VICINITY OF THE AIRPORT CONGESTED? (NO)
		SBFZ			ARE THERE ENVIRONMENTAL RESTRICTIONS? (YES)
		SBGH			ARE THERE ANY CONSTRAINTS ASSOCIATED WITH ATC WORKLOAD? (NO)
		SBGJ			IS THE ARRIVAL FLOW SMOOTH OR IT HAS HIGH PEAKS OF TRAFFIC? (HIGH PEAKS)
		SBGK			IS IT A SINGLE RUNWAY AIRPORT? (YES)
		SBGV			ARE THERE LOW VISIBILITY CONDITIONS FOR LONG PERIODS OF TIME? (NO)
		SBGW			IS THERE LONG PERIODS OF TIME WHEN THE ACTIVE RUNWAY(S) IS NOT AVAILABLE DUE TO AIRCRAFT CROSSING IT, FOD DETECTION AND REMOVAL SNOW OPERATIONS? (NO)
		SBGX			ARE THERE LONG RUNWAY OCCUPANCY TIMES OF LANDING AIRCRAFT? (YES)
SBGY	ARE THERE ANY CONSTRAINTS IN FINAL APPROACH? (NO)				
SBGZ	ARE THERE MORE THAN 10% OF APPROACHES EXECUTING GO AROUNDS? (NO)				
SBHH	IS THE SEPARATION ON FINAL APPLIED ON DISTANCE OR TIME? (DISTANCE)				
SBHV	IS THE MINIMUM SEPARATION APPLIED IN FINAL APPROACH? (NO)				
SBHJ	ARE THERE PARALLEL DEPENDENT RUNWAYS? (YES)				
SBHK	IS THE AIRPORT OPERATING UNDER CROSSWIND FOR MORE THAN 40% OF THE TIME? (NO)				
SBHV	IS THE UTILIZATION FO THE ARRIVAL/DEP CAPACITY ABOVE 80%? (YES)				

State	FIR	Indicator	CTA/TMA	Remarks
			Name	
Brazil	SBAZ	SBWA	AMAZONICA (CIRCEA 100-1)	
Brazil	SBAZ	SBWB	BELÉM	
Brazil	SBAZ	SBWN	MANAUS	
Brazil	SBAZ	SBWQ	BOA VISTA	
Brazil	SBAZ	SBWV	PORTO VELHO	
Brazil	SBAZ	SBWX	SANTARÉM	
Brazil	SBAZ	SBXB	RIO BRANCO	
Brazil	SBAZ	SBXJ	MARABÁ	
Brazil	SBAZ	SBXK	MACAPÁ	
Brazil	SBBS	SBWH	BELO HORIZONTE	
Brazil	SBBS	SBWR	BRASÍLIA	
Brazil	SBBS	SBWY	CUIABÁ	
Brazil	SBBS	SBXD	PALMAS	
Brazil	SBBS	SBXN	ANÁPOLIS	
Brazil	SBBS	SBXQ	ACADEMIA	
Brazil	SBBS	SBXU	UBERABA	
Brazil	SBBS	SBXW	UBERLÂNDIA	
Brazil	SBCW	SBWE	MACAÉ	
Brazil	SBCW	SBWG	CAMPO GRANDE	
Brazil	SBCW	SBWI	FOZ DO IGUAÇU	
Brazil	SBCW	SBWJ	RIO DE JANEIRO	
Brazil	SBCW	SBWM	SANTA MARIA	
Brazil	SBCW	SBWP	PORTO ALEGRE	
Brazil	SBCW	SBWT	CURITIBA	
Brazil	SBCW	SBWU	BAURU	
Brazil	SBCW	SBXF	FLORIANÓPOLIS	
Brazil	SBCW	SBXG	PRESIDENTE PRUDENTE	
Brazil	SBCW	SBXL	PASO DE LOS LIBRES(CIRCEA 100-12)	
Brazil	SBCW	SBXO	LONDRINA	
Brazil	SBCW	SBXP	SÃO PAULO	
Brazil	SBRE	SBWF	RECIFE	
Brazil	SBRE	SBWK	PORTO SEGURO	
Brazil	SBRE	SBWL	ILHÉUS	
Brazil	SBRE	SBWS	SÃO LUIS	
Brazil	SBRE	SBWZ	FORTALEZA	
Brazil	SBRE	SBXA	ARACAJU	
Brazil	SBRE	SBXE	TERESINA	
Brazil	SBRE	SBXM	MACEIÓ	
Brazil	SBRE	SBXR	VITÓRIA	
Brazil	SBRE	SBXS	SALVADOR	
Brazil	SBRE	SBXT	NATAL	

	List	Remarks
	<p>Planes regionales activos. marco alineado a planes globales (GANP, GASP, GASEP).</p> <p>Impulso a la implantación ATM/CNS y servicios de apoyo. Recursos CNS y coordinación regional. Red IP regional – REDDIG.</p> <p>Aerolíneas / industria desarrollada. Relación estado/ stakeholders.</p> <p>Autoridades / reguladores. Estructura regulatoria (LARS)</p> <p>Región integrada en aspecto sociopolítico. Foros regionales de implementación y seguimiento.</p>	
<b>Strengths</b>	<p>Liderazgo de RO SAM OACI. Respuesta unitaria de la Región/Industria a la emergencia sanitaria.</p> <p>Estructura de espacio aéreo Seamless. Planes de contingencia ATS armonizados.</p> <p>Cooperación técnica OACI – Proyectos RLA 06 901, SRVSOP, etc. Documentación técnica /guías regionales. ICAO PORTAL.</p> <p>Staff profesional competente, y con experiencia.</p> <p>Modelo de operación de aeropuertos. Mejoras técnicas/seguridad operacional. Vigilancia del regulador.</p> <p>Hubs regionales. Infraestructura soporta conectividad regional.</p>	
<b>Weakness</b>	<p>Falta de estructura regional ANS más resiliente. Tecnología/unidades de respaldo – CNS ATM backups.</p> <p>Excesiva rotación en administración pública. Modelo de gestion para ANS/ Autoridad/Industria. dificultad para coordinar entre actores del sistema.</p> <p>Ejecución presupuestal engorrosa o lenta para adquisición de tecnología. Requiere adecuada preparación ToR.</p> <p>Gestión de planes nacionales PNNA. enfoque de programas/ proyectos para la implantación.</p> <p>Interoperabilidad CNS aún en proceso. Dependencia y GAPS de equipamiento técnico y mantenimiento.</p> <p>Implantación discontinua en el ANS. gaps en el QMS de MET y AIM. Sistemas SSP y SMS aún en proceso.</p> <p>Capacitación especializada, simuladores y OJT (AIM, PANSOPS, etc.) costosa y/o escasa. Falta orientar a planes globales.</p> <p>Implantación ANS (ejemplo FUA, ATFM) incompleta.</p> <p>Recursos humanos. Brecha/Cambio generacional. Políticas/gestión de talento humano - Plan de carrera. transferencia de conocimiento/tecnología.</p> <p>Comunicación / cooperación interregional Caribe - Sudamérica y otros.</p> <p>Certificación de aeropuertos afectados por esquema de concesión.</p> <p>Limitada conectividad aérea de la región</p> <p>Falta de expertos en algunas áreas de la navegación aérea, que conlleve a la implementación de los nuevos conceptos del GANP.</p> <p>Transitoria demanda baja proporciona condiciones para implementación de nuevo concepto del GANP, de manera gradual, con miras a ganar experiencia e mantenerlos cuando se finalice el proceso de recuperación de la aviación .</p> <p>GANP/ 6 -ASBU. cuatro capas e indicadores. Desarrollo de planes Regionales /Nacionales.</p> <p>Aviacion civil como motor de desarrollo. Estímulos económicos. financiamiento accesible.</p> <p>Innovación, investigación y desarrollo en tecnología para suministro de ANS.</p> <p>Tendencia a la resiliencia y costo/eficiencia. Procesos resilientes/lecciones aprendidas.</p>	
<b>Opportunities</b>	<p>Auditorias de USOAP.</p> <p>Transitoria baja demanda incide en actividades de mejora interna (Administración, procedimientos, ATM, etc.).</p> <p>Mayor acceso a cursos, reuniones/talleres virtuales. Participación de expertos, sinergia.</p> <p>Servicios ANS virtualizados /automatizados. Uso eficiente de recursos y base de datos. Vigilancia de regulador por medio remoto.</p> <p>Tendencia a un ambiente colaborativo. Abarca entrenamiento uso compartido de tecnología.</p> <p>Tecnología CNS /ATM en evolución o emergente.</p> <p>Lenta recuperación industria/aerolíneas (&gt; 2024). Reorganización del mercado aeronáutico, competencia por mercados.</p> <p>Nuevo brote. Pandemia.</p> <p>Cambios en el patrón de movilización de las personas (teleconferencias). Pérdida de confianza del usuario.</p>	
<b>Threats</b>	<p>Economía ralentizada. Cambio en prioridades públicas en estados. Falta de capacidad de inversiones en ANSP/aeropuerto/ industria.</p> <p>Situaciones políticas de estados. Posible inestabilidad jurídica. Excesiva intervención.</p> <p>Confianza de los usuarios.</p> <p>Ataques a la Ciber seguridad</p>	

ID	KPA	Focus Area	Performance Objective	Remarks
765	EFFICIENCY	Flight time & distance	Reduce need for path stretching (arrival)	
765	EFFICIENCY	Flight time & distance	Reduce need for vectoring (arrival)	
765	EFFICIENCY	Vertical flight efficiency	Reduce tactical altitude constraints during climb imposed by ATM	
765	EFFICIENCY	Vertical flight efficiency	Reduce altitude restrictions introduced to avoid airspace above or below	
765	EFFICIENCY	Vertical flight efficiency	Reduce permanent (airspace and approach procedure design) and semi-permanent (ATFCM measures) altitude constraints along the descent portion of traffic flows, in en-route and terminal airspace	
770	EFFICIENCY	Flight time & distance	Avoid slow taxi-out	
770	EFFICIENCY	Flight time & distance	Avoid longer taxi-out routes	
770	EFFICIENCY	Flight time & distance	Reduce holding time on apron after push-back	
770	EFFICIENCY	Flight time & distance	Reduce taxi-out stops due to conflicting traffic	
770	EFFICIENCY	Flight time & distance	Avoid slow taxi-in	
770	EFFICIENCY	Flight time & distance	Avoid longer taxi-in routes	
770	EFFICIENCY	Flight time & distance	Reduce conflict points of taxi flows	
770	EFFICIENCY	Flight time & distance	Reduce need for path stretching (arrival)	
770	EFFICIENCY	Flight time & distance	Reduce need for vectoring (arrival)	
770	CAPACITY	Capacity, throughput & utilization	Relax scheduling constraints if these are capping the demand unnecessarily	
770	CAPACITY	Capacity, throughput & utilization	Increase real capacity if this is the constraining factor	
770	CAPACITY	Capacity, throughput & utilization	Make more RWY occupancy time available for departures	
770	CAPACITY	Capacity, throughput & utilization	Compress the departure flow of the RWY (reduce time/distance separation on take-off)	
770	CAPACITY	Capacity, throughput & utilization	Reduce penalty caused by parallel dependent RWYs (departures)	
770	CAPACITY	Capacity shortfall & associated delay	Mitigate minor, occasional and/or temporary demand/capacity imbalance	
770	PREDICTABILITY	Punctuality	Reduce the number of late-arriving aircraft	
770	PREDICTABILITY	Punctuality	Reduce the number of delayed push-back events due to late-arriving aircraft	
770	PREDICTABILITY	Punctuality	Reduce the number of delayed push-back events due to reactionary delay	
770	PREDICTABILITY	Punctuality	Reduce en-route time	
770	PREDICTABILITY	Punctuality	Reduce airborne time	
770	PREDICTABILITY	Punctuality	Reduce gate-to-gate time	
770	PREDICTABILITY	Punctuality	Reduce the variability of airborne flight time	

ID	KPA	Performance Objective	KPIs	Remarks
765	EFFICIENCY	Reduce need for path stretching (arrival)	KPI08 - Additional time in terminal airspace	Actual terminal airspace transit time compared to an unimpeded time
765	EFFICIENCY	Reduce need for vectoring (arrival)	KPI08 - Additional time in terminal airspace	Actual terminal airspace transit time compared to an unimpeded time
765	EFFICIENCY	Reduce tactical altitude constraints during climb imposed by ATM	KPI17 - Level-off during climb	Distance and time flown in level flight before Top of Climb
765	EFFICIENCY	Reduce altitude restrictions introduced to avoid airspace above or below	KPI19 - Level-off during descent	Distance and time flown in level flight after Top of Descent
765	EFFICIENCY	Reduce permanent (airspace and approach procedure design) and semi-permanent (ATFCM measures) altitude constraints along the descent portion of traffic flows, in en-route and terminal airspace	KPI19 - Level-off during descent	Distance and time flown in level flight after Top of Descent
770	EFFICIENCY	Avoid slow taxi-out	KPI02 - Taxi-out additional time	Actual taxi-out time compared to an unimpeded/reference taxi-out time
770	EFFICIENCY	Avoid longer taxi-out routes	KPI02 - Taxi-out additional time	Actual taxi-out time compared to an unimpeded/reference taxi-out time
770	EFFICIENCY	Reduce holding time on apron after push-back	KPI02 - Taxi-out additional time	Actual taxi-out time compared to an unimpeded/reference taxi-out time
770	EFFICIENCY	Reduce taxi-out stops due to conflicting traffic	KPI02 - Taxi-out additional time	Actual taxi-out time compared to an unimpeded/reference taxi-out time
770	EFFICIENCY	Avoid slow taxi-in	KPI13 - Taxi-in additional time	Actual taxi-in time compared to an unimpeded/reference taxi-in time
770	EFFICIENCY	Avoid longer taxi-in routes	KPI13 - Taxi-in additional time	Actual taxi-in time compared to an unimpeded/reference taxi-in time
770	EFFICIENCY	Reduce conflict points of taxi flows	KPI13 - Taxi-in additional time	Actual taxi-in time compared to an unimpeded/reference taxi-in time
770	EFFICIENCY	Reduce need for path stretching (arrival)	KPI08 - Additional time in terminal airspace	Actual terminal airspace transit time compared to an unimpeded time
770	EFFICIENCY	Reduce need for vectoring (arrival)	KPI08 - Additional time in terminal airspace	Actual terminal airspace transit time compared to an unimpeded time
770	CAPACITY	Relax scheduling constraints if these are capping the demand unnecessarily	KPI 10 - Airport peak throughput	The 95th percentile of the hourly number of operations recorded at an airport
770	CAPACITY	Increase real capacity if this is the constraining factor	KPI 09 - Airport peak capacity	The highest number of operations an airport can accept in a one-hour time frame
770	CAPACITY	Make more RWY occupancy time available for departures	KPI 10 - Airport peak throughput	The 95th percentile of the hourly number of operations recorded at an airport
770	CAPACITY	Compress the departure flow of the RWY (reduce time/distance separation on take-off)	KPI 10 - Airport peak throughput	The 95th percentile of the hourly number of operations recorded at an airport
770	CAPACITY	Reduce penalty caused by parallel dependent RWYs (departures)	KPI 10 - Airport peak throughput	The 95th percentile of the hourly number of operations recorded at an airport
770	CAPACITY	Mitigate minor, occasional and/or temporary demand/capacity imbalance	KPI 10 - Airport peak throughput	The 95th percentile of the hourly number of operations recorded at an airport
770	PREDICTABILITY	Reduce the number of late-arriving aircraft	KPI01 - Departure punctuality	Percentage of flights departing from the gate on-time (compared to schedule)
770	PREDICTABILITY	Reduce the number of delayed push-back events due to late-arriving aircraft	KPI01 - Departure punctuality	Percentage of flights departing from the gate on-time (compared to schedule)
770	PREDICTABILITY	Reduce the number of delayed push-back events due to reactionary delay	KPI01 - Departure punctuality	Percentage of flights departing from the gate on-time (compared to schedule)
770	PREDICTABILITY	Reduce en-route time	KPI05 - Actual en-route extension	Actual en-route distance flown compared to a reference ideal distance.
770	PREDICTABILITY	Reduce airborne time	KPI 14 - Arrival punctuality	Percentage of flights arriving at the gate on-time (compared to schedule)
770	PREDICTABILITY	Reduce gate-to-gate time	KPI 14 - Arrival punctuality	Percentage of flights arriving at the gate on-time (compared to schedule)
770	PREDICTABILITY	Reduce the variability of airborne flight time	KPI 15 - Flight time variability	Distribution of the flight (phase) duration around the average value

ID	STATE	FIR/CTA/TMA/AIRPORT	KPI01	KPI02	KPI03	KPI04	KPI05	KPI06	KPI07	BASELINE									Remarks		
										KPI08	KPI09	KPI10	KPI11	KPI12	KPI13	KPI14	KPI15	KPI16		KPI17	KPI18
765	BRAZIL	SBXP								4.27								x		x	
765	BRAZIL	SBWJ								2.65								x		x	
765	BRAZIL	SBWH								2.69								x		x	
770	BRAZIL	SBBR	88.9%	4.36			x			1.97	26	21		2.31	96.7%	5.5					
770	BRAZIL	SBFC	87.5%	3.41			x			2.69	16	13		0.92	95.1%	4.9					
770	BRAZIL	SBCG	90.4%	2.51			x				12	6		1.83	80.3%						
770	BRAZIL	SBCT	88.0%	3.26			x			2.41	12	8		1.65	94.9%	5.2					
770	BRAZIL	SBFL	87.5%	3.32			x			2.11	9	6		1.77	89.5%	5.2					
770	BRAZIL	SBFI	87.0%	2.84			x				8	4		1.43	84.2%						
770	BRAZIL	SBPA	86.9%	3.22			x			2.13	13	9		1.68	62.3%						
770	BRAZIL	SBFZ	86.1%	2.97			x				14	7		1.56	90.9%						
770	BRAZIL	SBRF	86.0%	3.16			x			2.51	15	11		1.23	80.2%						
770	BRAZIL	SBSV	79.0%	3.57			x			1.64	14	9		1.7	90.3%	6.9					
770	BRAZIL	SBPS	76.7%	3.18			x				8	5		1.03	95.7%						
770	BRAZIL	SBMO	72.1%	2.09			x				14	3		1.24	89.2%						
770	BRAZIL	SBCY	88.9%	2.53			x				11	8		1.58	93.5%						
770	BRAZIL	SBEG	81.7%	2.51			x				13	8		1.28	88.9%	6.4					
770	BRAZIL	SBSL	80.8%	5.04			x				10	4		5.85	91.6%						
770	BRAZIL	SBBE	77.7%	2.68			x				10	6		1.71	92.6%	7.3					
770	BRAZIL	SBRB	67.1%	4.19			x				12	2		1.33	91.9%						
770	BRAZIL	SBBV	65.3%	4.09			x				11	5		1	94.7%						
770	BRAZIL	SBPV	59.4%	1.91			x				11	4		1.31	63.1%						
770	BRAZIL	SBRJ	88.7%	3.38			x			2.47	15	13		1.63	10.9%	5.5					
770	BRAZIL	SBSP	86.8%	4.97			x			3.67	20	23		2.08	58.1%	5.7					
770	BRAZIL	SBGR	86.0%	4.79			x			4.27	28	27		2.85	64.6%	6.3					
770	BRAZIL	SBKP	83.3%	4.23			x			3.26	16	19		2.01	85.2%						
770	BRAZIL	SBSJ	74.0%	4.8			x				11	4		2.63	12.4%						
770	BRAZIL	SBGL	73.5%	5.01			x			2.65	22	14		3.84	85.3%	6					
770	BRAZIL	FIR BS (agregação)	88.3%												96.0%						
770	BRAZIL	FIR CW (agregação)	87.6%												80.5%						
770	BRAZIL	FIR RE (agregação)	82.4%												87.2%						
770	BRAZIL	FIR AZ (agregação)	80.2%												90.1%						
770	BRAZIL	TMA-SP e RJ (agregação)	84.5%												62.8%						
770	BRAZIL	BRAZIL (agregação)	84.8%												75.5%						

TARGET

ID	STATE	FIR/CTA/TMA/AIRPORT	KPI01	KPI02	KPI03	KPI04	KPI05	KPI06	KPI07	KPI08	KPI09	KPI10	KPI11	KPI12	KPI13	KPI14	KPI15	KPI16	KPI17	KPI18	KPI19	Remarks
765	BRAZIL	SBXP								3.5								x		x		
765	BRAZIL	SBWJ								2.3								x		x		
765	BRAZIL	SBWH								2.3								x		x		
770	BRAZIL	SBBR	90.0%	3.8			x			1.8	26	21			3 >90%	5						
770	BRAZIL	SBCF	90.0%	3			x			2.5	16	13			2 >90%	4						
770	BRAZIL	SBCG	91.0%	2.4			x				13	6			2 >90%							
770	BRAZIL	SBCT	90.0%	3			x			2.1	13	8			2 >90%	4.5						
770	BRAZIL	SBFL	90.0%	3			x			2	9	6			2 >90%	4.5						
770	BRAZIL	SBFJ	90.0%	2.6			x				8	4			2 >90%							
770	BRAZIL	SBPA	90.0%	3			x			1.9	13	9			2 >80%							
770	BRAZIL	SBFZ	90.0%	2.7			x				14	7			2 >90%							
770	BRAZIL	SBRF	90.0%	2.9			x			2.1	15	11			2 >90%							
770	BRAZIL	SBSV	90.0%	3.1			x			1.5	14	9			2 >90%	6						
770	BRAZIL	SBPS	80.0%	2.5			x				8	5			2 >90%							
770	BRAZIL	SBMO	80.0%	2			x				14	3			2 >90%							
770	BRAZIL	SBCY	90.0%	2.3			x				11	8			2 >90%							
770	BRAZIL	SBEG	90.0%	2.4			x				13	8			2 >90%	5.5						
770	BRAZIL	SBSL	90.0%	4			x				10	4			5 >90%							
770	BRAZIL	SBBE	90.0%	2.3			x				10	6			2 >90%	6						
770	BRAZIL	SBRB	80.0%	3			x				12	2			2 >90%							
770	BRAZIL	SBBV	80.0%	3			x				11	5			2 >90%							
770	BRAZIL	SBPV	80.0%	1.9			x				11	4			2 >80%							
770	BRAZIL	SBRJ	90.0%	3			x			2.3	15	13			2 >80%	4.5						
770	BRAZIL	SBSP	90.0%	4			x			3.2	20	23			2 >80%	5						
770	BRAZIL	SBGR	90.0%	4			x			3.8	29	27			3 >80%	5.5						
770	BRAZIL	SBKP	90.0%	4			x			3.1	19	19			2 >90%							
770	BRAZIL	SBSJ	80.0%	4			x				11	4			3 >80%							
770	BRAZIL	SBGL	90.0%	4			x			2.4	22	14			3.5 >90%	5						
770	BRAZIL	FIR BS (agregação)	90.0%												>90%							
770	BRAZIL	FIR CW (agregação)	90.0%												>90%							
770	BRAZIL	FIR RE (agregação)	90.0%												>90%							
770	BRAZIL	FIR AZ (agregação)	90.0%												>90%							
770	BRAZIL	TMA-SP e RJ (agregação)	90.0%												>80%							
770	BRAZIL	BRAZIL (agregação)	90.0%												>80%							

ID	STATE	FIR/CTA /TMA /AIRPORT	KPI	ASBU Elements / Operational Improvements	Start Year	End Year	Implementation progress	Remarks
765	BRAZIL	SBXP, SBWJ, SBWH	KPI17 - Level-off during climb	FRTO-B0/2 - Airspace planning and Flexible Use of Airspace (FUA)	2016	2021		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI19 - Level-off during descent	FRTO-B0/2 - Airspace planning and Flexible Use of Airspace (FUA)	2016	2021		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI17 - Level-off during climb	NOPS-B0/1 - Initial integration of collaborative airspace management with air traffic flow management	2017	2022		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI19 - Level-off during descent	NOPS-B0/1 - Initial integration of collaborative airspace management with air traffic flow management	2017	2022		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI17 - Level-off during climb	FRTO-B1/3 - Advanced Flexible Use of Airspace (FUA) and management of real time airspace data	2021	2024		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI19 - Level-off during descent	FRTO-B1/3 - Advanced Flexible Use of Airspace (FUA) and management of real time airspace data	2021	2024		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI17 - Level-off during climb	NOPS-B1/5 - Full integration of airspace management with air traffic flow management	2020	2025		
765	BRAZIL	SBXP, SBWJ, SBWH	KPI19 - Level-off during descent	NOPS-B1/5 - Full integration of airspace management with air traffic flow management	2020	2025		
770	BRAZIL	MANY AIRPORTS	KPI 10 - Airport peak throughput	APTA-B0/2 - PBN SID and STAR procedures (with basic capabilities)	2013	2022		
770	BRAZIL	MANY AIRPORTS	KPI 10 - Airport peak throughput	APTA-B0/6 - PBN Helicopter Point in Space (PinS) Operations				
770	BRAZIL	MANY AIRPORTS	KPI02 - Taxi-out additional time	RSEQ-B0/2 - Departure Management				
770	BRAZIL	MANY AIRPORTS	KPI 10 - Airport peak throughput	RSEQ-B0/2 - Departure Management				
770	BRAZIL	MANY AIRPORTS	KPI 10 - Airport peak throughput	APTA-B1/2 - PBN SID and STAR procedures (with advanced capabilities)				
770	BRAZIL	MANY AIRPORTS	KPI02 - Taxi-out additional time	SURF-B1/4 - Routing service to support ATCO surface operations management				
770	BRAZIL	MANY AIRPORTS	KPI13 - Taxi-in additional time	SURF-B1/4 - Routing service to support ATCO surface operations management				
770	BRAZIL	MANY AIRPORTS	KPI02 - Taxi-out additional time	SURF-B1/5 - Enhanced vision systems for taxi operations				
770	BRAZIL	MANY AIRPORTS	KPI13 - Taxi-in additional time	SURF-B1/5 - Enhanced vision systems for taxi operations				