



Agenda Item 6: Assessment of the operational requirements to determine the implementation of improvements in communication, navigation and surveillance (CNS) capabilities for en-route and terminal area operations

FOLLOW UP ON THE INTERCONNECTION OF AUTOMATED SYSTEMS

(Presented by the Secretariat)

SUMMARY		
This working paper presents information about the activities carried out for the implementation of automated systems in the SAM Region since the Seventh Workshop of the SAM Implementation Group (SAM/IG/7)		
Reference: <ul style="list-style-type: none">• Report of the Seventh Workshop of the SAM Implementation Group (SAM/IG/7, Lima, Peru, 23-27 May 2011)		
ICAO objectives:	strategic	<i>A – Safety C – Environmental protection and sustainable development of air transport</i>

1 Background

1.1 The SAM/IG/7 meeting was informed about the progress made for the interconnection of automated systems in the SAM Region as a follow up to the Regional action plan for the interconnection of automated systems prepared to that end. Likewise, it took note of the activities specified in the Memorandums of Understanding (MoUs) that had been developed and signed to date. In this respect, the progress made in their implementation since the SAM/IG/7 meeting is shown herein. Part of this information was obtained during the web conferences for the follow up of the implementation of improvements in CNS systems and the implementation of automated systems, on 16 June 2011, and 26 July 2011.

2 Discussion

Interconnection of automated systems between Argentina and Uruguay

2.1 Pursuant to the requirements established in the MoU between Argentina and Uruguay, as updated at the Second ATM/CNS Multilateral Meeting between Argentina, Bolivia, Brazil, Paraguay and Uruguay held in Lima, Peru, on 9-12 August 2010, the radar data of Durazno (Uruguay) is available at Ezeiza (Argentina) since late March 2011, thus completing the implementation of radar data exchange using the IP protocol between Argentina and Uruguay, since the radar data of Quilmes (Argentina) was already available in Montevideo, leaving pending the operational use of available data through the establishment of operational agreements. The implementation of the AIDC between the Montevideo and the Ezeiza ACCs would be available in 2012.

Interconnection of automated systems between Argentina and Brazil

2.2 The MoU signed between the Administrations of Argentina and Brazil establishes the interconnection of automated systems of the Resistencia and Curitiba ACCs to carry information from the secondary radar of Resistencia to the Curitiba ACC and from the radars of Santiago and Foz de Iguaçu to the Resistencia ACC. The date for the interconnection of radar data is foreseen for October 2011. The implementation of the AIDC between the Curitiba ACC and the Ezeiza ACC is foreseen for April 2012.

Interconnection of automated systems between Brazil and Uruguay

2.3 Pursuant to the MoU signed between the Administrations of Brazil and Uruguay, which establishes the interconnection of automated systems between the Curitiba ACC and the Montevideo ACC, carrying information from the secondary radar of Durazno to Curitiba, and from the radars of Santiago and Canguçu to the Montevideo ACC, coordination is under way for the exchange of radar data starting in October 2011. The implementation of the AIDC between the Curitiba ACC and the Montevideo ACC is foreseen for April 2012.

Interconnection of automated systems between Argentina and Chile

2.4 According to the MoU signed between Argentina and Chile, the exchange of radar data between the Santiago ACC (Chile) and the Ezeiza, Córdoba and Comodoro-Rivadavia ACCs (Argentina) would be implemented by November 2011. The radars involved in Chile are Iquique, Antofagasta, Chañaral, La Serena, Santiago, Temuco, Puerto Montt, Balmaceda and Punta Arenas. The radars involved in Argentina are Mendoza, Santa Rosa, Neuquén, Córdoba, San Luis, Tucumán, Salta, La Rioja and Bariloche.

2.5 As a result of the web conference held on 16 June 2011, the focal point of Argentina responsible for the coordination needed for the implementation of automated systems presented simplified connection schemes and interfaces required for the exchange of radar data, as shown in **Appendix A** to this working paper.

Interconnection of automated systems between Brazil and Venezuela

2.6 The MoU between Brazil and Venezuela for the exchange of radar data and flight plans between the Amazónico (Brazil) and Maiquetía (Venezuela) ACCs, establishes the exchange of radar data from Boa Vista and Sao Gabriel da Cachoeira (Brazil) and Santa Elena de Uairen (Venezuela). The interconnection of automated systems was foreseen for July 2011. In mid August 2011, ATECH personnel travelled to Venezuela to fulfil the activities contemplated in the MoU.

Interconnection of automated systems between Brazil and Peru

2.7 At the SAM/IG/7 meeting, Brazil and Peru started coordinating for the establishment of an MoU for the interconnection of radar data and flight plans (AIDC) between the new Lima ACC and the Manaus ACC. It is expected that this MoU will be signed at the SAM/IG/8 meeting. Since the Lima ACC is currently being modernised, the interconnection between Peru and Brazil will be supported by the contractor INDRA.

Interconnection of automated systems between Chile and Peru

2.8 At the SAM/IG/7 meeting, Chile provided Peru with a preliminary MoU document for the interconnection of automated systems between the Santiago ACC and the Lima ACC, for review by the Aeronautical Administration of Peru, with a view to signing it in October 2011 at the SAM/IG meeting.

Implementation of new MoUs in the SAM Region

2.9 Initial coordination took place between Colombia and Panama, as well as between Peru and Ecuador, for the drafting of an MoU for the interconnection of automated systems. It is expected that the drafting of the respective MoUs will start at the meeting.

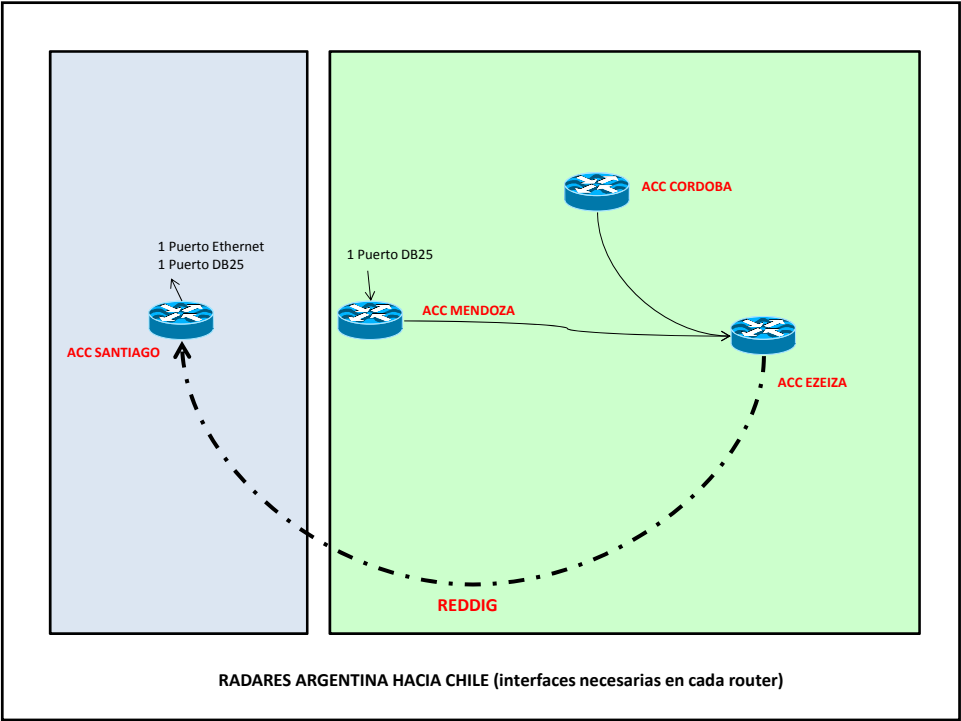
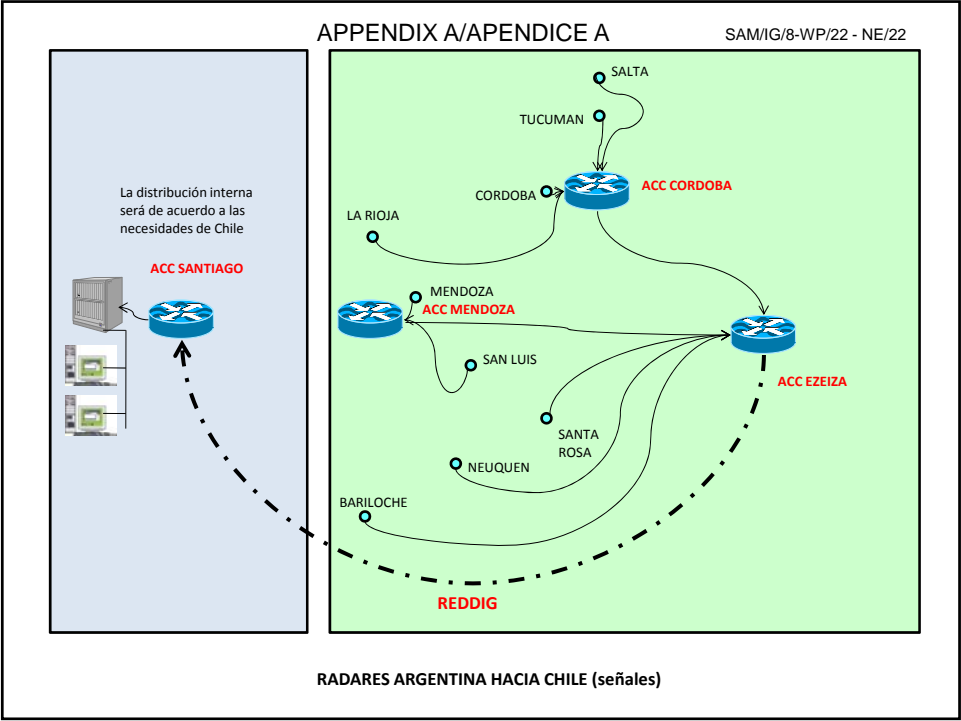
Review of the Regional action plan for the interconnection of automated systems

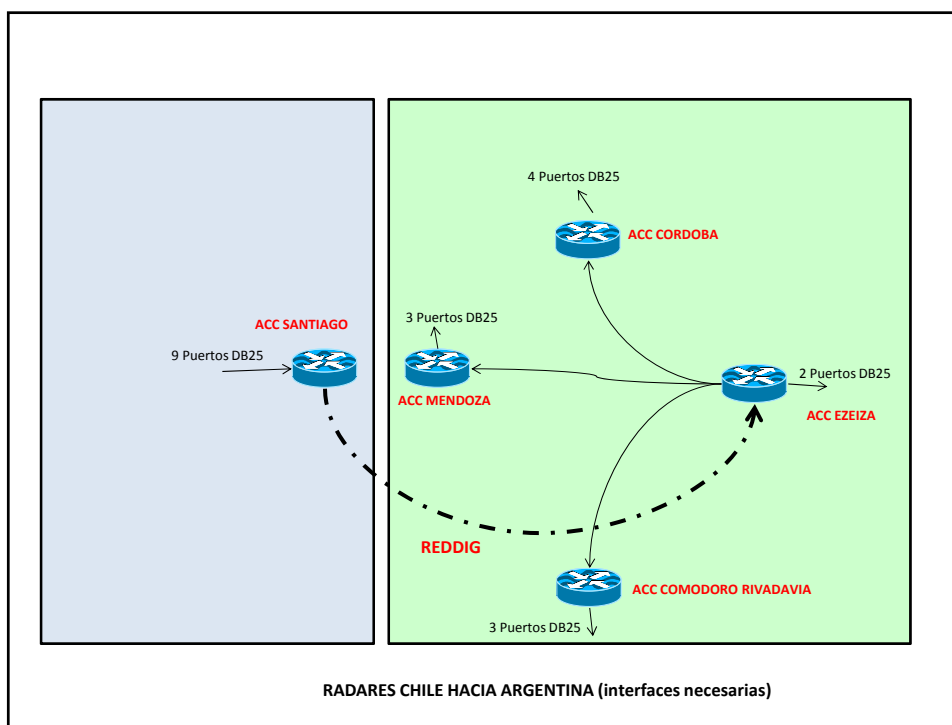
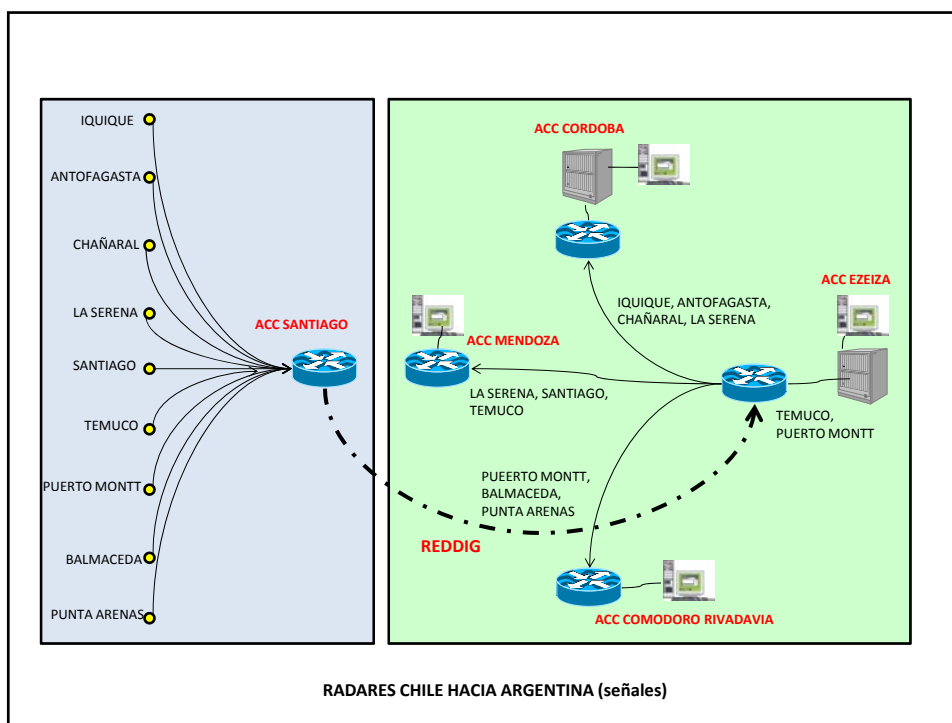
2.10 The Meeting, based on the information to be provided at the meeting, will review the action plan shown in Appendix B to this working paper.

3 Suggested action

3.1 The Meeting is invited to:

- a) take note of the information presented herein;
- b) review the progress made for the interconnection of the automated systems described in section 2 of this working paper;
- c) update the regional action plan for the implementation of automated systems shown in **Appendix B** to this working paper; and
- d) analyse any other matters it may deem appropriate.





Resumen de necesidades:**CHILE**

Router Santiago: 1 puerto DB25 (para el radar de Mendoza),
Switch Santiago: 1 puerto Ethernet (todos los demás radares)
Enrutamiento nacional: a criterio de Chile

ARGENTINA

Router Ezeiza: 2 puertos DB25
Router Mendoza: 3 puertos DB25
Router Comodoro Rivadavia: 3 puertos DB25
Router Córdoba: 4 puertos DB25
Enrutamiento nacional: el indicado en los esquemas correspondientes

COMUN

Túneles IP a armar (como se desconoce el esquema IP de Chile, se asume que las señales se originan en Santiago; caso contrario, se debe reemplazar Santiago por el lugar de origen)

Mendoza – Santiago (radar Mendoza)
Santiago – Córdoba (radar Antofagasta)
Santiago – Córdoba (radar Iquique)
Santiago – Córdoba (radar Chañaral)
Santiago – Córdoba (radar La Serena)
Santiago – Mendoza (radar La Serena)
Santiago – Mendoza (radar Santiago)
Santiago – Mendoza (radar Temuco)
Santiago – Ezeiza (radar Temuco)
Santiago – Ezeiza (radar Puerto Montt)
Santiago – Comodoro Rivadavia (radar Puerto Montt)
Santiago – Comodoro Rivadavia (radar Balmaceda)
Santiago – Comodoro Rivadavia (radar Punta Arenas)

APPENDIX B / APENDICE B

SAM/IG/8-WP/22 - NE/22

ID	Nome da tarefa	Duration	Start	Finish	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half
1	SAM Region Interconnection Plan / Plan de Interconexión Región SAM	1370 days	Mon 21/04/08	Fri 19/07/13																
2	Plan approval / Aprobación del Plan	1 day	Mon 21/04/08	Mon 21/04/08		I														
3	Establishment of management team / Creación del equipo de gestión	1 day	Mon 21/04/08	Mon 21/04/08		I														
4	Execution / Ejecución	1 day	Mon 21/04/08	Mon 21/04/08		I														
5	Coordination meetings / Reuniones de coordinación	770 days	Mon 03/11/08	Fri 14/10/11																
6	SAM/IG/2	5 days	Mon 03/11/08	Fri 07/11/08			I													
7	SAM/IG/3	5 days	Mon 20/04/09	Fri 24/04/09				I												
8	SAM/IG/4	5 days	Mon 19/10/09	Fri 23/10/09					I											
9	SAM/IG/5	5 days	Mon 10/05/10	Fri 14/05/10						I										
10	SAM/IG/6	5 days	Mon 18/10/10	Fri 22/10/10							I									
11	SAMIG/7	5 days	Mon 23/05/11	Fri 27/05/11								I								
12	SAMIG/8	5 days	Mon 10/10/11	Fri 14/10/11									I							
13	MoU establishment / Establecimiento de MoU	693 days	Wed 16/09/09	Fri 11/05/12																
14	Argentina - Uruguay	1 day	Wed 16/09/09	Wed 16/09/09								I								
15	Argentina - Brasil	1 day	Wed 16/09/09	Wed 16/09/09								I								
16	Argentina - Chile	10 days	Mon 18/10/10	Fri 29/10/10										I						
17	Brasil - Uruguay	1 day	Wed 16/09/09	Wed 16/09/09								I								
18	Brasil -Venezuela	1 day	Thu 21/10/10	Thu 21/10/10										I						
19	Brasil Colombia	5 days	Mon 28/11/11	Fri 02/12/11											I					
20	Colombia- Ecuador	5 days	Mon 23/05/11	Fri 27/05/11												I				
21	Colombia=Panama	5 days	Mon 23/05/11	Fri 27/05/11													I			
22	Colombia Venezuela	5 days	Mon 23/05/11	Fri 27/05/11														I		
23	Peru Chile	5 days	Mon 07/05/12	Fri 11/05/12															I	
24	Peru Colombia	5 days	Mon 07/05/12	Fri 11/05/12																I
25	Peru Ecuador	5 days	Mon 07/05/12	Fri 11/05/12																I
26	Paraguay Argentina	5 days	Mon 13/02/12	Fri 17/02/12																I
27	Paraguay Brasil	5 days	Mon 13/02/12	Fri 17/02/12																I
28	Flight plan interconnection / Interconexión de plan de vuelo	641 days	Fri 30/07/10	Fri 11/01/13																
29	OLDI	375 days	Mon 01/08/11	Fri 04/01/13																
30	EZEIZA-SANTIAGO	22 days	Tue 01/11/11	Wed 30/11/11																
31	BOGOTA - GUAYAQUIL	5 days	Mon 21/11/11	Fri 25/11/11																
32	BOGOTA - PANAMA	5 days	Mon 19/12/11	Fri 23/12/11																
33	BOGOTA - BARRANQUILLA	5 days	Mon 21/11/11	Fri 25/11/11																
34	BARRANQUILLA - PANAMA	5 days	Mon 19/12/11	Fri 23/12/11																
35	SANTIAGO - CORDOBA	22 days	Tue 01/11/11	Wed 30/11/11																
36	SANTIAGO - COMODORO RIVADÁVIA	22 days	Tue 01/11/11	Wed 30/11/11																
37	AMAZÓNICO-BOGOTÁ	20 days	Mon 01/08/11	Fri 26/08/11																
38	LIMA - SANTIAGO	20 days	Mon 18/06/12	Fri 13/07/12																
39	LIMA - GUAYAQUIL	20 days	Mon 02/07/12	Fri 27/07/12																
40	LIMA - BOGOTA	20 days	Mon 10/12/12	Fri 04/01/13																
41	DOC 44444	22 days	Mon 02/05/11	Tue 31/05/11																

Projeto: PLAN ACCIÓN INTERCONEX Data: Tue 20/09/11	Tarefa		Tarefas externas		Manual Task		Finish-only	
	Divisão		Etapla Tarefa		Duration-only		Andamento	
	Etapla		Inactive Task		Manual Summary Rollup		Divisão	
	Resumo		Inactive Milestone		Manual Summary			
	Resumo do projeto		Inactive Summary		Start-only			

APPENDIX B / APENDICE B

SAM/IG/8-WP/22 - NE/22

ID	Nome da tarefa	Duration	Start	Finish	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half
42	AMAZONICO - MAIQUETIA	22 days	Mon 02/05/11	Tue 31/05/11																
43	AIDC	641 days	Fri 30/07/10	Fri 11/01/13																
44	CURITIBA-RESISTENCIA	21 days	Mon 03/10/11	Mon 31/10/11																
45	CURITIBA - MONTEVIDEO	22 days	Wed 01/06/11	Thu 30/06/11																
46	EZEIZA-CORDOBA	20 days	Fri 30/07/10	Thu 26/08/10																
47	EZEIZA - MONTEVIDEO	65 days	Mon 03/10/11	Fri 30/12/11																
48	LIMA - AMAZONICO	20 days	Mon 17/12/12	Fri 11/01/13																
49	ASUNCIÓN - CURITIBA	20 days	Mon 05/03/12	Fri 30/03/12																
50	ASUNCIÓN - EZEIZA	20 days	Mon 05/03/12	Fri 30/03/12																
51	Radar data exchange / Intercambio de datos radar	1370 days	Mon 21/04/08	Fri 19/07/13																
52	Direct connection to centre - ASTERIX / Conexión Directa al Centro - ASTERIX	1370 days	Mon 21/04/08	Fri 19/07/13																
53	CORDOBA – SANTIAGO	22 days	Tue 01/11/11	Wed 30/11/11																
54	EZEIZA - SANTIAGO	22 days	Tue 01/11/11	Wed 30/11/11																
55	SANTIAGO - C. RIVADÁVIA	22 days	Tue 01/11/11	Wed 30/11/11																
56	MENDOZA – SANTIAGO	30 days	Mon 11/06/12	Fri 20/07/12																
57	EZEIZA – PUERTO MONTT	30 days	Mon 13/06/11	Fri 22/07/11																
58	PUNTA ARENAS – C. RIVADAVIA	30 days	Mon 10/06/13	Fri 19/07/13																
59	AMAZONICO – BOGOTA	30 days	Mon 03/12/12	Fri 11/01/13																
60	CURITIBA – MONTEVIDEO	30 days	Tue 01/03/11	Mon 11/04/11																
61	CURITIBA - RESISTENCIA	21 days	Mon 03/10/11	Mon 31/10/11																
62	BOGOTA – GUAYAQUIL	30 days	Mon 12/12/11	Fri 20/01/12																
63	BOGOTA – PANAMA	30 days	Mon 05/12/11	Fri 13/01/12																
64	BOGOTA – BARRANQUILLA	30 days	Mon 21/04/08	Fri 30/05/08																
65	BOGOTA – LIMA	30 days	Mon 13/05/13	Fri 21/06/13																
66	BOGOTA – MAIQUETÍA	30 days	Tue 31/01/12	Mon 12/03/12																
67	BARRANQUILLA – PANAMA	30 days	Mon 13/06/11	Fri 22/07/11																
68	BARRANQUILLA – MAIQUETÍA	30 days	Wed 29/02/12	Tue 10/04/12																
69	LIMA – SANTIAGO	30 days	Mon 21/05/12	Fri 29/06/12																
70	LIMA – GUAYAQUIL	30 days	Mon 10/06/13	Fri 19/07/13																
71	LIMA – AMAZONICO	30 days	Mon 10/06/13	Fri 19/07/13																
72	ASUNCIÓN – CURITIBA	30 days	Mon 03/12/12	Fri 11/01/13																
73	ASUNCIÓN – EZEIZA	30 days	Mon 10/12/12	Fri 18/01/13																
74	MONTEVIDEO-EZEIZA	23 days	Tue 01/03/11	Thu 31/03/11																
75	ICD owner / ICD propietario	23 days	Tue 01/03/11	Thu 31/03/11																
76	AMAZONICO - MAIQUETIA	23 days	Tue 01/03/11	Thu 31/03/11																
77	Inter-Centro ASTERIX 62,63 (TBD)	1 day	Mon 04/03/13	Mon 04/03/13																

Projeto: PLAN ACCIÓN INTERCONEX
Data: Tue 20/09/11

Tarefa

Divisão

Etapas

Resumo

Resumo do projeto

Tarefas externas

Etapas Tarefa

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Andamento

Divisão