

**U.S. ATLAS  
1.1 Silicon ETC 01  
WBS 1.1.1 Pixels Schedule**

ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	1.1.1	<b>US ATLAS Pixel Project</b>	<b>1305 d</b>	<b>Mon 10/2/00</b>	<b>Fri 9/30/05</b>																				
2		US ATLAS Review	2 d	Thu 11/2/00	Fri 11/3/00																				
3	1.1.1.1	<b>Mechanics</b>	<b>1185 d</b>	<b>Mon 10/2/00</b>	<b>Fri 4/15/05</b>																				
4	1.1.1.1.1	<b>Design</b>	<b>1185 d</b>	<b>Mon 10/2/00</b>	<b>Fri 4/15/05</b>																				
5		Mechanics Engineering FY01 \$s	260 d	Mon 10/2/00	Fri 9/28/01																				
6		Mechanics Engineering FY02 \$s	261 d	Mon 10/1/01	Mon 9/30/02																				
7		Mechanics Engineering FY03 \$s	261 d	Tue 10/1/02	Tue 9/30/03																				
8		Mechanics Engineering FY04 \$s	262 d	Wed 10/1/03	Thu 9/30/04																				
9		Mechanics Engineering FY05 \$s	141 d	Fri 10/1/04	Fri 4/15/05																				
10		Disk Sector PRR	0 d	Wed 6/20/01	Wed 6/20/01																				
11		Global Support CDR	0 d	Wed 6/20/01	Wed 6/20/01																				
12		Global Support FDR	0 d	Tue 10/16/01	Tue 10/16/01																				
13		Release bids for support	0 d	Tue 12/18/01	Tue 12/18/01																				
14		Bid evaluation complete for support	0 d	Tue 2/12/02	Tue 2/12/02																				
15		Global Support PRR	0 d	Tue 2/26/02	Tue 2/26/02																				
16		ATLAS PM approval of global support procurement	0 d	Tue 3/5/02	Tue 3/5/02																				
17		Support tube CDR	0 d	Wed 6/20/01	Wed 6/20/01																				
18		Support tube FDR	0 d	Mon 12/10/01	Mon 12/10/01																				
19		Release bid for Support tube	0 d	Tue 12/4/01	Tue 12/4/01																				
20		Support tube bid eval complete	0 d	Tue 2/12/02	Tue 2/12/02																				

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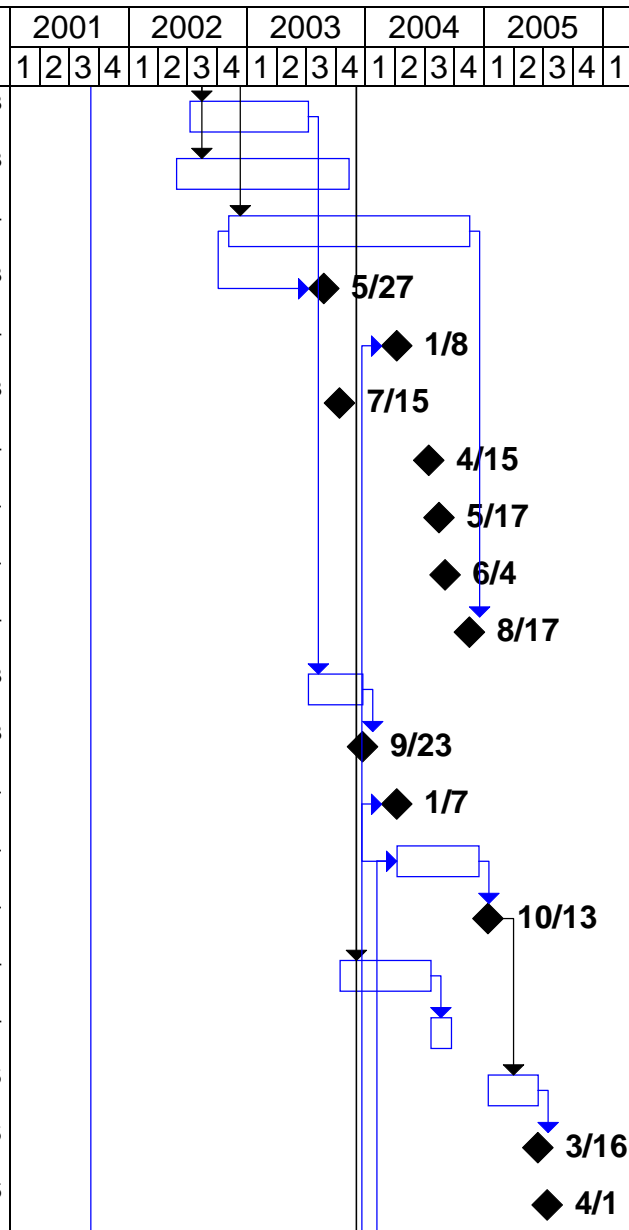
ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
21		Support tube PRR	0 d	Tue 2/26/02	Tue 2/26/02					◆															
22		ATLAS PM approval of Support tube procurement	0 d	Tue 3/5/02	Tue 3/5/02					◆															
23		B-layer CDR	0 d	Tue 2/26/02	Tue 2/26/02					◆															
24		B-layer FDR	0 d	Tue 10/8/02	Tue 10/8/02									◆											
25		B-layer PRR	0 d	Tue 6/17/03	Tue 6/17/03													◆							
26		Cables/services CDR	0 d	Wed 6/20/01	Wed 6/20/01	◆																			
27		Cables/services FDR	0 d	Tue 2/26/02	Tue 2/26/02					◆															
28		Release bids for initial cables	0 d	Tue 4/16/02	Tue 4/16/02						◆														
29		Bid evaluation complete for outer cables	0 d	Tue 6/11/02	Tue 6/11/02							◆													
30		Cables/services PRR	0 d	Tue 6/25/02	Tue 6/25/02							◆													
31		ATLAS PM approval of outer cables procurement	0 d	Tue 7/2/02	Tue 7/2/02							◆													
32		Assembly/Installation CDR	0 d	Tue 2/26/02	Tue 2/26/02					◆															
33		Management contingency decision on US contributic	0 d	Mon 9/16/02	Mon 9/16/02									◆											
34		Assembly/Installation FDR	0 d	Tue 10/8/02	Tue 10/8/02									◆											
35		Assembly/Installation PRR	0 d	Tue 6/17/03	Tue 6/17/03													◆							
36	1.1.1.1.2	<b>Development/Prototypes</b>	<b>707 d</b>	<b>Mon 10/2/00</b>	<b>Tue 6/17/03</b>	◆																			
37		Development/Prototypes FY01 \$s	260 d	Mon 10/2/00	Fri 9/28/01																				
38		Development/Prototypes FY02 \$s	261 d	Mon 10/1/01	Mon 9/30/02																				
39		Development/Prototypes FY03 \$s	186 d	Tue 10/1/02	Tue 6/17/03																				
40		Sector development/prototypes	187 d	Mon 10/2/00	Wed 6/20/01																				

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ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005					
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
41		Complete sector development	0 d	Wed 6/20/01	Wed 6/20/01				◆	6/20																	
42		Disk development/prototypes	272 d	Mon 10/2/00	Tue 10/16/01																						
43		Complete disk development	0 d	Tue 10/16/01	Tue 10/16/01				◆	10/16																	
44		Global support development/prototypes	272 d	Mon 10/2/00	Tue 10/16/01																						
45		Complete global support development/prototypes	0 d	Tue 10/16/01	Tue 10/16/01				◆	10/16																	
46		Support tube development/prototypes	240 d	Mon 1/8/01	Mon 12/10/01																						
47		Support tube development complete	0 d	Mon 12/10/01	Mon 12/10/01				◆	12/10																	
48		Outer services development/prototypes	400 d	Wed 12/13/00	Tue 6/25/02																						
49		Compl. Outer services development/prototypes	0 d	Tue 6/25/02	Tue 6/25/02					◆	6/25																
50		B-layer support development/prototypes	637 d	Mon 1/8/01	Tue 6/17/03																						
51		Complete B-layer shell prototype	0 d	Mon 12/10/01	Mon 12/10/01				◆	12/10																	
52		Complete B-layer support development	0 d	Tue 6/17/03	Tue 6/17/03													◆	6/17								
53	1.1.1.1.3	<b>Production</b>	<b>983 d</b>	<b>Wed 7/11/01</b>	<b>Fri 4/15/05</b>																						
54		Production FY01 \$s	58 d	Wed 7/11/01	Fri 9/28/01																						
55		Production FY02 \$s	261 d	Mon 10/1/01	Mon 9/30/02																						
56		Production FY03 \$s	261 d	Tue 10/1/02	Tue 9/30/03																						
57		Production FY04 \$s	262 d	Wed 10/1/03	Thu 9/30/04																						
58		Production FY05 \$s	141 d	Fri 10/1/04	Fri 4/15/05																						
59		Disk Sector Fab/Test	250 d	Wed 7/11/01	Tue 6/25/02																						
60		Disk Support Ring Fab/Test	160 d	Wed 4/10/02	Tue 11/19/02																						

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1.1 Silicon ETC 01  
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ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
61		Support Frame Fab/Test	260 d	Wed 4/10/02	Tue 4/8/03																				
62		Support tubes Fab/Test	380 d	Wed 2/27/02	Tue 8/12/03																				
63		Outer Services Fab/Test	530 d	Wed 8/7/02	Tue 8/17/04																				
64		Services Compl. For Initial Cryo/Hall Installation	0 d	Tue 5/27/03	Tue 5/27/03																				
65		Services Complete for Initial Assembly	0 d	Thu 1/8/04	Thu 1/8/04																				
66		Start rack installation	0 d	Tue 7/15/03	Tue 7/15/03																				
67		Start install Type IV cable	0 d	Thu 4/15/04	Thu 4/15/04																				
68		Start pipes install PP2-PP3	0 d	Mon 5/17/04	Mon 5/17/04																				
69		Start Type III cable install	0 d	Fri 6/4/04	Fri 6/4/04																				
70		All Outer Services Complete	0 d	Tue 8/17/04	Tue 8/17/04																				
71		Trial Outer Structure Assembly	120 d	Wed 4/9/03	Tue 9/23/03																				
72		Outer Structure Complete/Ready for Modules	0 d	Tue 9/23/03	Tue 9/23/03																				
73		Outer Structure Needed for Modules	0 d	Wed 1/7/04	Wed 1/7/04																				
74		Disk Assembly/Test	180 d	Thu 1/8/04	Wed 9/15/04																				
75	<b>Sil L2/9; Sil L3/1</b>	Disk System at CERN	0 d	Wed 10/13/04	Wed 10/13/04																				
76		Fab services supports	200 d	Wed 7/16/03	Tue 4/20/04																				
77		Trial assembly services supports	45 d	Wed 4/21/04	Tue 6/22/04																				
78		Outer System Assembly/Test at CERN	110 d	Thu 10/14/04	Wed 3/16/05																				
79		Outer System Ready for Installation	0 d	Wed 3/16/05	Wed 3/16/05																				
80		ATLAS need date for outer system install	0 d	Fri 4/15/05	Fri 4/15/05																				







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1.1 Silicon ETC 01  
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ID	WBS	Task Name	Duration	Start	Finish	2001	2002	2003	2004	2005										
						1	2	3	4	1	2	3	4	1	2	3	4	1		
121		Outer layers design	633 d	Mon 10/2/00	Wed 3/5/03															
122		B-layer design	390 d	Thu 5/23/02	Wed 11/19/03															
123		Test design	418 d	Mon 10/2/00	Wed 5/8/02															
124		DMILL Review	0 d	Fri 12/15/00	Fri 12/15/00	◆ 12/15														
125		DMILL decision(FE-D3 or not)	0 d	Thu 2/15/01	Thu 2/15/01	◆ 2/15														
126		FE-I1 spec complete	0 d	Wed 5/16/01	Wed 5/16/01	◆ 5/16														
127		FE-I1 FDR	0 d	Wed 6/13/01	Wed 6/13/01	◆ 6/13														
128		Management contingency decision DMILL	0 d	Wed 1/9/02	Wed 1/9/02	◆ 1/9														
129		FE-I2 spec complete	0 d	Wed 4/10/02	Wed 4/10/02	◆ 4/10														
130		FE-I2 FDR	0 d	Wed 5/8/02	Wed 5/8/02	◆ 5/8														
131		Compl. Spec for IBM production order release	0 d	Thu 11/21/02	Thu 11/21/02	◆ 11/21														
132		IBM Production release order effort	60 d	Thu 12/12/02	Wed 3/5/03															
133		IBM FE PRR	0 d	Wed 3/5/03	Wed 3/5/03	◆ 3/5														
134		ATLAS PM approval of IBM procurement	0 d	Wed 3/12/03	Wed 3/12/03	◆ 3/12														
135		Release initial MC for IBM FE	0 d	Wed 3/12/03	Wed 3/12/03	◆ 3/12														
136		Release IBM production	0 d	Wed 3/12/03	Wed 3/12/03	◆ 3/12														
137		B-Layer FDR	0 d	Wed 3/5/03	Wed 3/5/03	◆ 3/5														
138		Compl. Spec for B-Layer prod order release	0 d	Thu 6/5/03	Thu 6/5/03	◆ 6/5														
139		Production release order effort	90 d	Thu 7/17/03	Wed 11/19/03															
140		B-Layer PRR	0 d	Wed 11/19/03	Wed 11/19/03	◆ 11/19														





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1.1 Silicon ETC 01  
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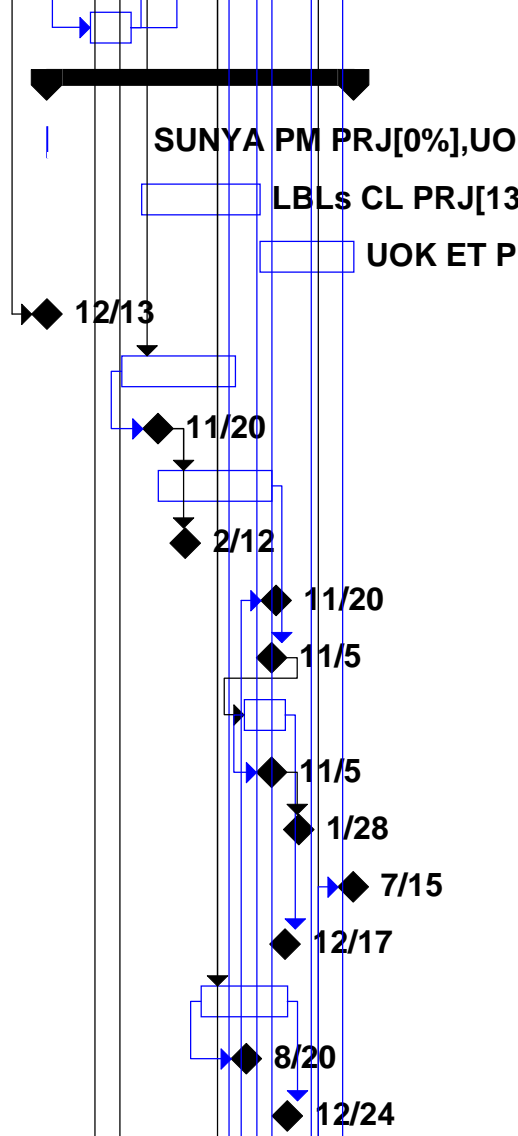
ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
161		1st IBM prototype delivered	0 d	Wed 10/24/01	Wed 10/24/01					◆															
162		Complete initial wafer probe FE-I1	0 d	Wed 11/7/01	Wed 11/7/01					◆															
163		First bump bonded FE-I1 assemblies arrive	0 d	Wed 1/9/02	Wed 1/9/02						◆														
164		Complete initial lab/ irradiation tests FE-I1	0 d	Wed 5/8/02	Wed 5/8/02							◆													
165		Beam/system tests of FE-I1 assemblies	160 d	Fri 3/1/02	Thu 10/10/02																				
166		2nd IBM prototype submitted(FE-I2)	0 d	Wed 6/19/02	Wed 6/19/02							◆													
167		2nd IBM prototype wafers delivered	0 d	Wed 9/18/02	Wed 9/18/02								◆												
168		Complete initial wafer probe FE-I2	0 d	Wed 10/30/02	Wed 10/30/02								◆												
169		First bump bonded FE-I2 assemblies arrive	0 d	Wed 11/27/02	Wed 11/27/02									◆											
170		Complete initial lab/system/ irradiation tests FE-I2	0 d	Wed 3/5/03	Wed 3/5/03											◆									
171		Beam/system tests of FE-I2 assemblies	200 d	Fri 1/10/03	Thu 10/16/03																				
172	1.1.1.3.3	<b>Production</b>	<b>598 d</b>	<b>Mon 4/1/02</b>	<b>Wed 7/14/04</b>																				
173		Elec.'s Production FY02 \$\$	131 d	Mon 4/1/02	Mon 9/30/02																				
174		Elec.'s Production FY03 \$\$	261 d	Tue 10/1/02	Tue 9/30/03																				
175		Elec.'s Production FY04 \$\$	206 d	Wed 10/1/03	Wed 7/14/04																				
176	Sil L2/7	Start IBM Production	0 d	Thu 3/13/03	Thu 3/13/03											◆									
177		Outer FE IBM Production	250 d	Thu 3/13/03	Wed 2/25/04																				
178		1st outer IBM wafers arrive	0 d	Wed 7/30/03	Wed 7/30/03																				
179		Test outer FE IBM wafers	250 d	Thu 7/31/03	Wed 7/14/04																				
180		Outer IBM FE Testing complete	0 d	Wed 7/14/04	Wed 7/14/04																			◆	





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ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
221		3rd Optical Prototype Fab and Test	90 d	Fri 4/26/02	Thu 8/29/02																				
222	1.1.1.4.3	<b>Production</b>	<b>676 d</b>	<b>Thu 12/13/01</b>	<b>Thu 7/15/04</b>																				
223		Hybrids Production FY02 \$s	208 d	Thu 12/13/01	Mon 9/30/02																				
224		Hybrids Production FY03 \$s	261 d	Tue 10/1/02	Tue 9/30/03																				
225		Hybrids Production FY04 \$s	207 d	Wed 10/1/03	Thu 7/15/04																				
226		Start initial production buy of components	0 d	Thu 12/13/01	Thu 12/13/01																				
227		Outer Flex Hybrid (Pre)Production/Load	250 d	Thu 8/1/02	Wed 7/16/03																				
228		First outer flex delivered	0 d	Wed 11/20/02	Wed 11/20/02																				
229		Outer flex testing	250 d	Thu 11/21/02	Wed 11/5/03																				
230		First outer flex available for module assembly	0 d	Wed 2/12/03	Wed 2/12/03																				
231		Need date for first outer flex	0 d	Thu 11/20/03	Thu 11/20/03																				
232		Outer flex testing complete	0 d	Wed 11/5/03	Wed 11/5/03																				
233		B-Layer Flex Hybrid (Pre)Production/Load/Test	90 d	Thu 8/14/03	Wed 12/17/03																				
234		First B-Layer flex delivered	0 d	Wed 11/5/03	Wed 11/5/03																				
235		First B-Layer flex available for modules	0 d	Wed 1/28/04	Wed 1/28/04																				
236		Need date for first B-layer flex	0 d	Thu 7/15/04	Thu 7/15/04																				
237		B-Layer flex testing complete	0 d	Wed 12/17/03	Wed 12/17/03																				
238		Optical (Pre)Production	190 d	Thu 4/3/03	Wed 12/24/03																				
239		First optical boards	0 d	Wed 8/20/03	Wed 8/20/03																				
240		Optical production complete	0 d	Wed 12/24/03	Wed 12/24/03																				





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ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
261		Modules Production FY03 \$\$	24 d	Thu 8/28/03	Tue 9/30/03																				
262		Modules Production FY04 \$\$	262 d	Wed 10/1/03	Thu 9/30/04																				
263		Modules Production FY05 \$\$	9 d	Fri 10/1/04	Wed 10/13/04																				
264		IBM FE Bump Deposition	230 d	Thu 8/28/03	Wed 7/14/04																				
265		IBM FE wafer thinning	230 d	Thu 9/25/03	Wed 8/11/04																				
266		IBM FE Wafer Dicing	230 d	Thu 10/2/03	Wed 8/18/04																				
267		IBM FE Die sort	230 d	Thu 10/9/03	Wed 8/25/04																				
268	<b>Sil L2/8</b>	Start IBM outer bare module production	0 d	Wed 10/22/03	Wed 10/22/03																				
269		IBM Outer bare module production	180 d	Thu 10/23/03	Wed 6/30/04																				
270		IBM outer bare module testing	165 d	Thu 11/20/03	Wed 7/7/04																				
271		IBM outer module assembly/test	165 d	Thu 12/4/03	Wed 7/21/04																				
272		Complete testing IBM outer modules	0 d	Wed 7/21/04	Wed 7/21/04																				
273		Module attach to disk sectors	160 d	Thu 12/18/03	Wed 7/28/04																				
274		Test disk sectors	160 d	Thu 12/25/03	Wed 8/4/04																				
275		Complete testing disk sectors	0 d	Wed 8/4/04	Wed 8/4/04																				
276		Start B-Layer bare module production	0 d	Wed 7/14/04	Wed 7/14/04																				
277		B-Layer bare module production	55 d	Thu 7/15/04	Wed 9/29/04																				
278		B-Layer module assembly/test	55 d	Thu 7/29/04	Wed 10/13/04																				
279		Complete testing B-Layer modules	0 d	Wed 10/13/04	Wed 10/13/04																				
280																									

LBLj ST PRJ[1,9

LBLj ST

◆ 10/22

◆ 7/21

◆ 8/4

◆ 7/14

◆ 10/13

**U.S. ATLAS  
1.1 Silicon ETC 01  
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ID	WBS	Task Name	Duration	Start	Finish	2001				2002				2003				2004				2005											
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
281	1.1.1.6	<b>Beam/System Test Support</b>	1305 d	Mon 10/2/00	Fri 9/30/05																												
282		<b>Test Beam Support</b>	780 d	Mon 10/2/00	Fri 9/26/03																												
283		Test Beam Support FY01 \$s	260 d	Mon 10/2/00	Fri 9/28/01																												
284		Test Beam Support FY02 \$s	261 d	Mon 10/1/01	Mon 9/30/02	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <b>LBLj PM PRJ[0%]</b>																											
285		Test Beam Support FY03 \$s	259 d	Tue 10/1/02	Fri 9/26/03	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <b>LBLj PM PRJ[0%]</b>																											
286		<b>System Test Support</b>	1305 d	Mon 10/2/00	Fri 9/30/05																												
287		System Test Support FY01 \$s	260 d	Mon 10/2/00	Fri 9/28/01	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <b>LBLj PM PRJ[0%]</b>																											
288		System Test Support FY02 \$s	261 d	Mon 10/1/01	Mon 9/30/02	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <b>LBLj PM PRJ[0%]</b>																											
289		System Test Support FY03 \$s	261 d	Tue 10/1/02	Tue 9/30/03	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <b>LBLj PM PRJ[0</b>																											
290		System Test Support FY04\$s	262 d	Wed 10/1/03	Thu 9/30/04	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div> <b>LBLj PM</b>																											
291		System Test Support FY05 \$s	261 d	Fri 10/1/04	Fri 9/30/05	<div style="border: 1px solid black; width: 100%; height: 15px; margin-bottom: 5px;"></div>																											