

# XFEL Top Level Milestones

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ID	Name	Description	Deadline	Date out of PTT	Status	Comment
1	Injector tunnel closed	Technical commissioning of warm injector done. Injector is ready to be cooled down in order to take beam.	30-Jun-2014	01-May-2014	OK	
2	First beam to Injector dump	Beam has been passed through the injector from the gun all the way to the injector dump	30-Sep-2014	14-Jan-2015	<b>delay 3 Mons</b>	Critical Items are: Master Laser Oscillator
3	Linac tunnel closed	Technical commissioning of warm linac done. Linac is ready to be cooled down in order to take beam	30-Jun-2015	27 Oct 2015	<b>delay 4 Mons</b>	Critical Items are: Cryomodules ready for installation, Cryo String Assembly, RF-System commissioning, and the path after installation of the last Cryo-String: Rack-Electronics, Cryo-Transferline.
4	SASE1 Instruments ready for beam	The SASE1 instruments are ready to open the beam shutters	31-Aug-2015	20 Nov 2015	<b>delay 3 Mons</b>	Additional critical things are: Machine Commissioning.
5	First beam to XSI Dump	Beam has been passed through the linac from injector all the way to the main dump	30-Sep-2015	20 Jan 2016	<b>Delay 4 mons</b>	
6	XTD2, XTD4, XTD9, XTD10 closed	Technical commissioning is complete and this machine section is ready to take beam	30 Sep 2015	28 Sep 2015	OK	
7	Beam to XSDU2	Beam has been passed through the SASE1/3 electron beam line all the way to XSDU2	15 Oct 2015	20 Jan 2016	<b>Delay 3 mons</b>	
8	First Lasing SASE1 possible	First SASE1 (SPB & FXIE) Photons in XHEXP1 possible	15 Dec 2015	23 Feb 2016	<b>Delay 2 mons</b>	
9	XTD1, XTD3,XTD5, XTD6, XTD7, XTD8 closed	Technical commissioning is complete and this machine section is ready to take beam	31 Dec 2015	04 Mar 2016	<b>delay 2 Mons</b>	
10	Beam to XSDU1	Beam has been passed through the SASE2 electron beam line all the way to XSDU1	15 Jan 2016	04 Mar 2016	<b>Delay 2 mons</b>	
11	SASE3 Instruments ready for beam	The SASE3 instruments are ready to open the beam shutters	31 Jan 2016	20 Nov 2015	OK	
12	First Lasing SASE3 possible	First SASE3 (SQS &SCS) Photons in XHEXP1 possible	31 Jan 2016	08 Mar 2016	<b>Delay 1 mons</b>	

13	Start Operation	Operation starts when the accelerator complex and SASE1 start operation with a photon beam in SASE1 achieving parameters compatible to the intermediate values of Table 4.1 in the Technical Document 1 attached to the Convention and sufficient equipment installed and commissioned to perform first scientific experiments. The parameters in Table 4.1 are: <ul style="list-style-type: none"><li>▪ Wavelength &lt; 0.2 nm</li><li>▪ Peak brilliance &gt; 10<sup>30</sup> Photons/s/mm2/mrad2/0.1%BW</li><li>▪ Dimension at sample &lt; 1 mm2 (FWHM)</li><li>▪ Positional Stability &lt; 50% of beam size (RMS)</li><li>▪ Photon Energy Stability &lt; 0.1%</li><li>▪ Shot-to-shot Intensity Fluctuation &lt; 10</li></ul>	31 Mar 2016	23 Feb 2016	OK	
14	SASE1 Instruments users operation	First user SASE1 (SPB & FXE) possible	31 Mar 2016	23 Feb 2016	OK	
15	SASE2 Instruments ready for beam	The SASE2 instruments are ready open the beam shutters	31 Mar 2016	05 July 2016	<b>Delay 3 mons</b>	
16	First Lasing SASE2 possible	First SASE2 (MID & HED) Photons in XHEXP1 possible	31 May 2016	19 July 2016	<b>Delay 1.5 mons</b>	
17	SASE3 Instruments user operation	First user experiment at SASE3 (SQS & SCS) possible	30 Apr 2016	08 Mar 2016	OK	
18	SASE2 Instruments user operation	First user experiment at SASE2 (MID & HED) possible	31 Jul 2016	19 July 2016	OK	
19	Extended beam delivery	Extended beam delivery specification reached with delivery of full number of hours under user operation conditions	Dec 2017	19. July 2016	???	

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