## **XFEL Top Level Milestones**

## From LLRFWiki

ID Na	1 Injector tunnel closed	First beam to Injector dump	3 Linac tunnel		SASE1 Instruments ready for beam	
Name				nts		to
Description	Technical commissioning of warm injector done. Injector is ready to be cooled down in 30-Jun-2014 order to take beam.	Beam has been passed through the injector from the gun all the way to the injector dump	Technical commissioning of warm linac done. Linac is ready to be cooled down in order to take beam	The SASE1 instruments are ready to open the beam shutters	Beam has been passed through the linac from injector all the way to the main dump	
Deadline	30-Jun-2014	30-Sep-2014	30-Jun-2015	31-Aug-2015	30-Sep-2015	
Date out of PIT	01-May-2014 OK	14-Jan-2015	11 Dec 2015	31-Aug-2015 05 Jun 2015	07 Mar 2016	
Status	OK	delay 3 Mons	delay 6 Mons	OK	Delay 6 mons	Delay:
Comment		Critical Items are: Master Laser Oscillator	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.		Additional critical things are: Machine Commissioning.	

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13	12	11	10	9	8	7
13 Start Operation	First Lasing SASE3 possible	SASE3 Instruments ready for beam	Beam to XSDU1	XTD1, XTD3,XTD5, XTD6, XTD7, XTD8 closed	First Lasing SASE1 possible	Beam to XSDU2
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:  • Wavelength < 0.2 nm	First SASE3 (SQS &SCS) Photons in XHEXP1 possible	The SASE3 instruments are ready to open the beam shutters	Beam has been passed through the SASE2 electron beam line all the way to XSDU1	Technical commissioning is complete and this machine section is ready to take beam	First SASE1 (SPB & FXE) Photons in XHEXP1 possible	Beam has been passed through the SASE1/3 electron beam line all the way to XSDU2
31 Mar 2016	31 Jan 2016	31 Jan 2016	15 Jan 2016	31 Dec 2015	15 Dec 2015	15 Oct 2015
08 Apr 2016	22 Apr 2016	20 Nov 2015	25 Mar 2016	28 Dec 2015	08 Apr 2016	07 Mar 2016
Delay 1 mons	Delay 4 mons	OK	Delay 3 mons	OK	Delay 4 mons	Delay 6 mons

			1_Milestones"	Retrieved from "http://mskpc14/wiki/index.php/XFEL_Top_Level_Milestones"	etrieved from "h	Iૠ
			•	Extended beam delivery specification reached with delivery of full number of hours under user operation conditions Dec 2017	19 Extended beam delivery	11
	OK	06 May 2016 OK	31 Jul 2016	First user experiment at SASE2 (MID & HED) possible	SASE2 18 Instruments user operation	1
	OK	22 Apr 2016	30 Apr 2016 22	First user experiment at SASE3 (SQS & SCS) possible	SASE3 17 Instruments user operation	1
	OK	06 May 2016 OK	31 May 2016	First SASE2 (MID & HED) Photons in XHEXP1 possible	First Lasing 16 SASE2 possible	1
	OK	05 Feb 2016	31 Mar 2016 05	The SASE2 instruments are ready open the beam shutters	SASE2 Instruments ready for beam	1
S Y	Delay 1 mons	08 Apr 2016	31 Mar 2016 0	First user SASE1 (SPB & FXE) possible	SASE1 14 Instruments users operation	1,
				<ul> <li>Peak brilliance &gt; 10^30 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>		

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