



**Synchrotron-light for Experimental Science and  
Applications in the Middle East**

## **SESAME Status**

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**EPCS Collaboration Meeting**

**Bessy, May 2002**

## What is SESAME?

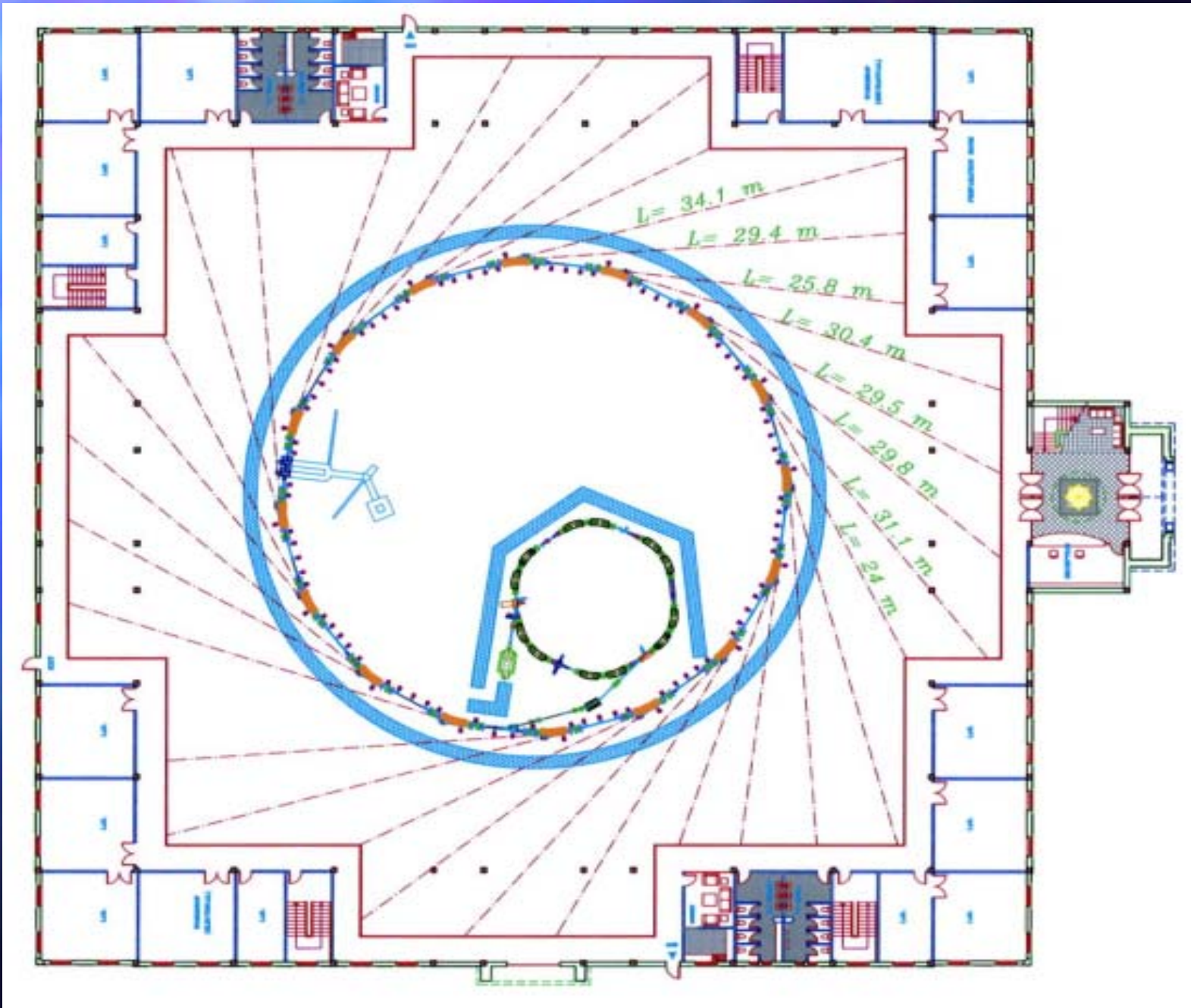
- & The Middle East's first major international research center
- & A medium energy light source under the UNESCO auspices
- & An Upgrade for Bessy I, a gift from the German Gov.
- & To be built in Jordan in Allan (30 km from Amman)
- & With a 14 member countries from the region (Armenia, Cyprus, Egypt, Greece, Iran, Israel, Jordan, Kuwait, Morocco, Oman, Pakistan, PA, Turkey, and UAE )

# SESAME Evolution

- & 1997, Herman Winick from SLAC and Gustav-Adolf Voss from DESY suggested that BESSY I to be moved to the Middle East after it is shutdown on 1999.
- & Oct 1999, 1st conceptual design report for the facility.
- & Jun 2000, The site was chosen in Jordan.
- & Sep 2000, 18 participants to receive advanced training at ANKA, Daresbury, DESY, Elettra, ESRF, LURE, MAXLAB, and the SLS.
- & Mar 2001, Jordan will fund the construction.
- & Sep 2001, full-time Technical Director, Professor Dieter Einfeld
- & Oct 2001, SESAME is officially under UNESCO auspices, UNESCO general conference.
- & April 2002, 2nd conceptual design report to be submitted to EU.
- & June 2002, Bessy I to be shipped to Jordan
- & Sep 2002, Ground Breaking Ceremony
- & ...

# SESAME LATTICE ( VER 8 )

Parameters	Values
E (GeV)	2
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C (m)	119.51
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No. of Straight Sections	16
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$\epsilon_x$ (nm.rad)	17.3
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$Q_x$ , $Q_z$	7.272 , 5.216
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$\zeta_x$ , $\zeta_z$	-13.608 , -14.889
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$\eta_x$ ( m )	0.52 (in 8 Sect.) , 0.4 (in the others)
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No. of BMs , B(T), k (m <sup>-2</sup> )	16 , 1.35 , -0.341
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No. of : Quads, Sextupoles	48 (3 families) , 64 (4 families)
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' (Str. Sec. Length) / C	41 %



# SESAME Control System Guidelines

& Optimum Price/Performance

& A tight budget, Incorporate as many standard reliable commercial and open source products.

& Avoid reinvention, No resources for development.

& Standardization; SW & HW

& 1 CS for Machine and Beamlines

## What we like about the SLS CS:

- & EPICS low level controls, extensive use of epics database (more reliable, better performance).
- & Linux PCs as Consoles.
- & Timing system.
- & Turn-Key subsystem (Industry participation)

## So far:

- & 2 Engineers for 1 year now at the SLS (20 %)
- & I/O points + HW + Computing infrastructure rough estimation.
- & Leads to a rough Cost estimation.
- & 2 full Test stand Crates, 21 slot each as a donation from the SLS, (PPC, vxWorks 5.3.1, EPICS 3.13.5)
- & All EPICS database (soft), based on I/O points, is running on the crates (using the SLS naming conventions).
- & Participating on the SLS SR, BL commissioning and daily operation.



# I/O points & Controllers

<b>Machine + 1 ID + 1 BL</b>	
<b>AI</b>	1050
<b>AO</b>	200
<b>D</b>	2600
<b>Serial</b>	11
<b>GPIB</b>	3
<b>Vedio</b>	2
<b>Motors</b>	54

<b>Machine</b>	13
<b>ID</b>	1
<b>BL</b>	2

## Still Ahead...

- &EPICS Application Development Environment.
- &RDB
- &API Abeans?, CDEV?, OO CA?; performance & BD req.
- &RTOS; RTEMS, L4Linux (HW support, Industry + other labs)