

SESAME

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

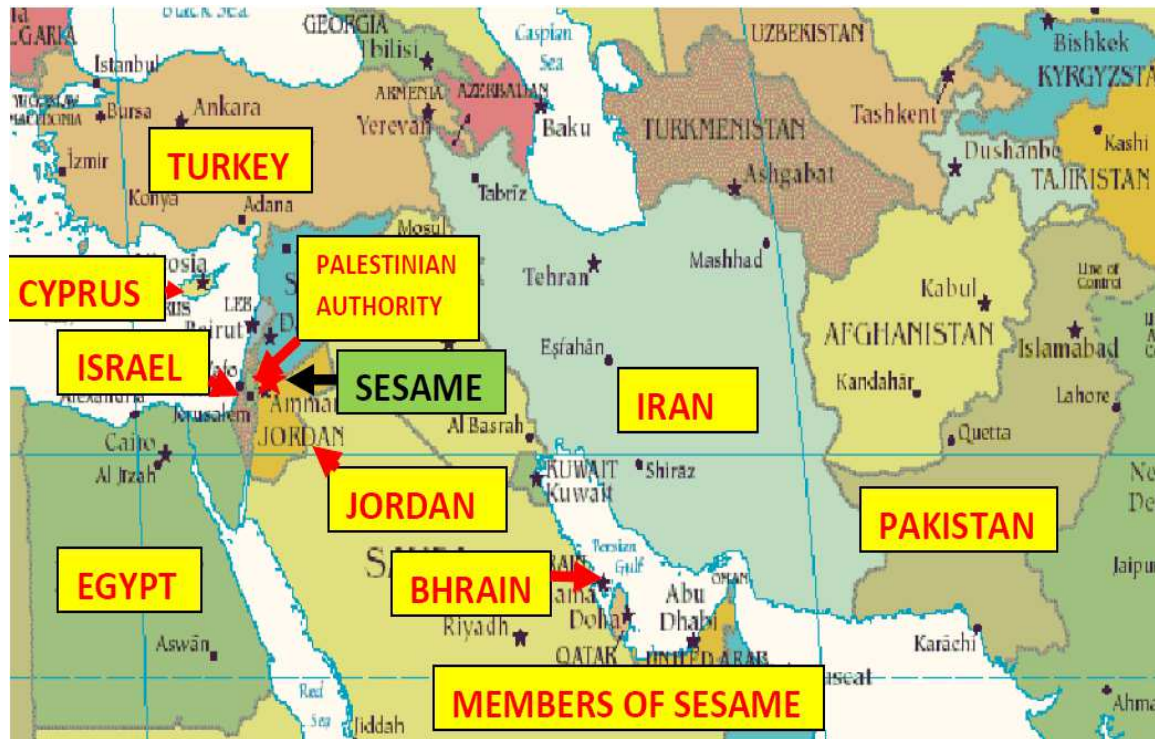
On behalf of the Members of SESAME:

**Bahrain, Cyprus, Egypt, Iran, Israel, Jordan,
Pakistan, the Palestinian Authority, Turkey**

SESAME is a 3rd generation light-source ('very powerful microscope') under construction near Amman-Jordan

SESAME will foster:

- science and technology in the Middle East and neighbouring countries (from biology and medical sciences through materials science and physics to archaeology)
- cooperation across political divides



Observers: China, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russian Federation, Sweden, Switzerland, UK, USA

**There are over 60 synchrotron-light sources in the world
None in the Middle East**

- International Collaboration is obvious way for countries with limited science budgets to build a synchrotron-light source
- Broad programmes make synchrotron-light sources ideal facilities for building scientific capacity
- SESAME will be a user facility: scientists will typically go to SESAME two or three times a year for a week or two to carry out experiments, in collaboration with scientists from other institutions/countries



Buildings can be used for high-quality Middle East Scientific meetings

Very Brief History of SESAME

- **Convergence of two ideas** – build a light source in the Middle East (Abdus Salam – early 1980s) + foster projects that cross divides
- **Original proposal (1997)** - rebuild old 0.8 GeV Berlin Synchrotron (BESSY 1) in the Middle East, as basis for a new international organisation, modelled on CERN
- **1999 - (Interim) Council established:** followed by international advisory committees
- **2002 - decision to build a new 2.5 GeV ring** (still using BESSY booster) *competitive 3rd generation facility*
- Ground breaking (2003); **completion of building (2008)**
- **Vigorous training programme and growing potential user community**
- **Commissioning end 2015**

SESAME is:

- **A working example of Middle East (Arab-Israeli-Iranian..) collaboration**
 - Senior scientists and administrators **from the region** are working together to govern SESAME through the Council, with input from scientists **from around the world** through its Advisory Committees
 - Young and senior scientists **from the region** are collaborating in preparing the scientific programme (Users' Meetings, Workshops)
- **Already building scientific and technical capacity in the region through the extensive training programme (Fellowships, Visits, Schools)**

SESAME would welcome new members

External Support for SESAME

- **Advice** – from members of Advisory Committees and visits
- **Equipment** – many donations of equipment surplus to requirements
- **Training** (Users' meetings, Workshops, Individual training - Visits, Fellowships,...) - one of the essential objectives of SESAME, supported by laboratories and organizations around the world

From: China, Brazil, France, German, Italy, Japan, Portugal, Spain, Sweden, Switzerland, UK, USA, EU, IAEA, UNESCO

Plus

- **Cash** – from the EU, Italy....



STATUS

There are challenges

- Solving problems involving travel restrictions
- Finding funding for provision of full energy and current, conference centre, full suite of Phase 1 beamlines,.....

But thanks to Iran, Israel, Jordan and Turkey each providing \$5 million, €5 million from the EU, the Members' Annual contributions etc...the funding gap is now relatively small and an enormous amount has been achieved:

- **Construction is progressing well – on track for commissioning to start in late 2015** (see talk by the Director)
- **Experimental programme** (in molecular biology, environmental studies, materials, archaeology sciences,.....) **on track to begin in 2016** (see talk by the Scientific Director)
- **The training program is building capacity in the region**

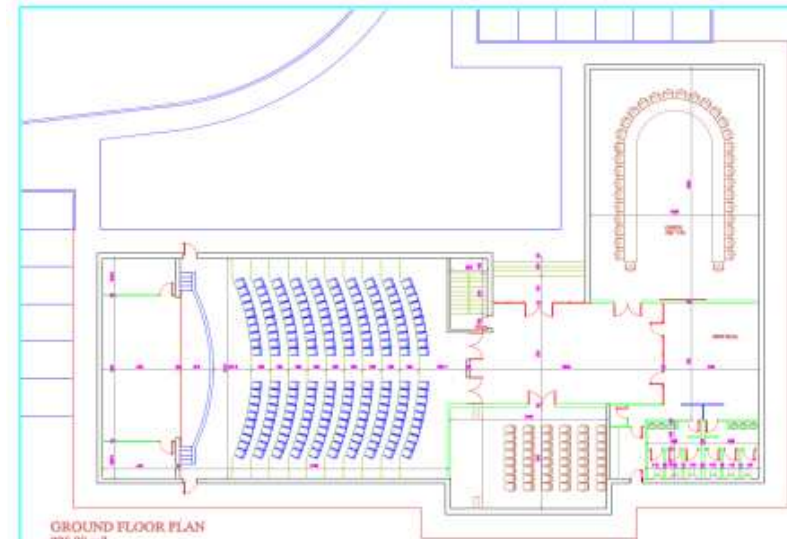
Beyond SESAME?

SESAME is planning to build a guest house, to be available on day one:



This will be followed by a Conference Centre:

When SESAME is not in operation, SESAME will be able to house meetings on other topics (food, water, archaeology, ...) in secure/easily accessible surroundings



Dream:

this will lead to other joint facilities & collaborations



For further information about SESAME see

<http://mag.digitalpc.co.uk/fvx/iop/esrf/sesamebrochure/>

www.sesame.org.jo

<http://www.sciencediplomacy.org/perspective/2012/synchrotron-light-and-middle-east>

For the views of future SESAME users see

<http://www.bbc.co.uk/news/world-middle-east-20492294>

<http://mag.digitalpc.co.uk/fvx/iop/esrf/sesamepeople/>

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