

KNX
The worldwide STANDARD
for
home and building control

KNX Association International

www.knx.org

KNX is the Standard

- CENELEC

EN 50090 – the only European Standard for Home and Building Electronic Systems (HBES) based on KNX.

- CEN

EN 13321-1 – the European Standard for Building Automation based on KNX.

- ISO/IEC

ISO/IEC 14543-3 – the World`s only Standard for Home Electronic Systems (HES) based on KNX.

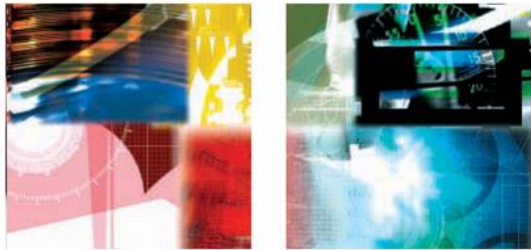
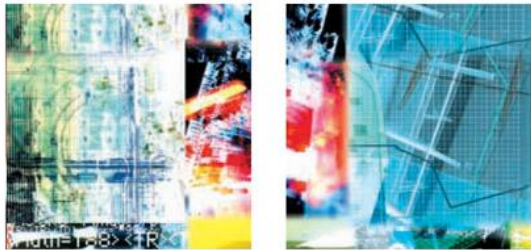
- GB/T

GB/T 20965 – Chinese Standard for Home and Building Control based on KNX

- US Standard (ANSI/ASHRAE 135)

KNX: The worldwide STANDARD for home and building control!





Advantages of KNX

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KNX – Advantage No. 1

KNX is a standard here to stay!

- CENELEC

2003: KNX became **EN50090**

- CEN

2005: KNX became **EN13321-1/2**

- ISO/IEC

2006: KNX became **ISO/IEC14543-3**

- SAC (P.R. China)

2013: KNX became **GB/T 20965**

- ANSI/ASHRAE

KNX referenced in **US ANSI/ASHRAE** standard **135**



KNX – Advantage No. 2

Guaranteed Interoperability through neutral certification

1. KNX is the only home and building control standard running global certification schemes for

- A. Products
- B. Training Centers
- C. Persons



2. Product compliance is checked at neutral third party test laboratories

**KNX Logo
guarantees
interoperability
between products
of different
manufacturers
and applications**

KNX – Advantage No. 3

KNX = High Product Quality

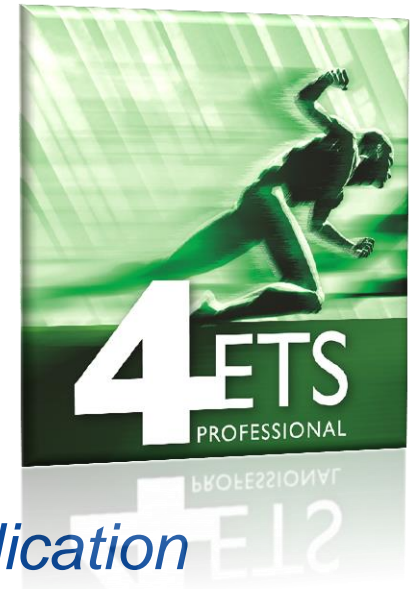


1. KNX Association requires *high level production and quality control* during all stages of the product's life
2. All manufacturers have to show compliance to *ISO 9001* = prerequisite for product certification

KNX – Advantage No. 4

One Tool – the Engineering Tool Software ETS™!

1. One PC software tool for
 - A. Design
 - B. Configuration
 - C. Diagnosticsof KNX all certified products
2. Tool is *manufacturer, devices and application* independent – integrator can combine products of different manufacturers and applications in one installation
3. Tool is extendable with customized Apps



KNX – Advantage No. 5

**Fit for use in ALL applications
in home and building control!**



KNX – Advantage No. 6

Fit for use in all kinds of buildings!

1. New or Existing Buildings
2. One family houses or large size buildings
3. Easy extendible/adaptable to new needs



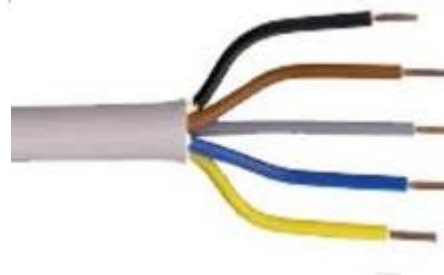
KNX – Advantage No. 7

Support for different transmission media

1. Twisted Pair



2. Power Line



3. Radio Frequency



4. Ethernet/WIFI



KNX – Advantage No. 8

Support for different configuration Modes

1. System Mode

- A. Configuration with PC (ETS)
- B. Prior basic course training recommended
- C. Any size of installation



2. Easy Mode

- A. Configuration without PC
- B. No prior training necessary
- C. Small or medium size installations



KNX – Advantage No. 9

Easy coupling to other systems

1. KNX members offer large variety of gateways to couple to other systems

2. Examples

A. Mapping to BACnet



B. Interfacing with DALI



KNX – Advantage No. 10

KNX is independent from any hard- or software technology

1. KNX manufacturers can develop own protocol solution
 1. From scratch
 2. On basis of existing certified system components from other KNX members
2. KNX is completely FREE of additional royalty fees: No IPR royalties to be paid for KNX standard features used in KNX certified products to other KNX members





KNX Facts and Figures

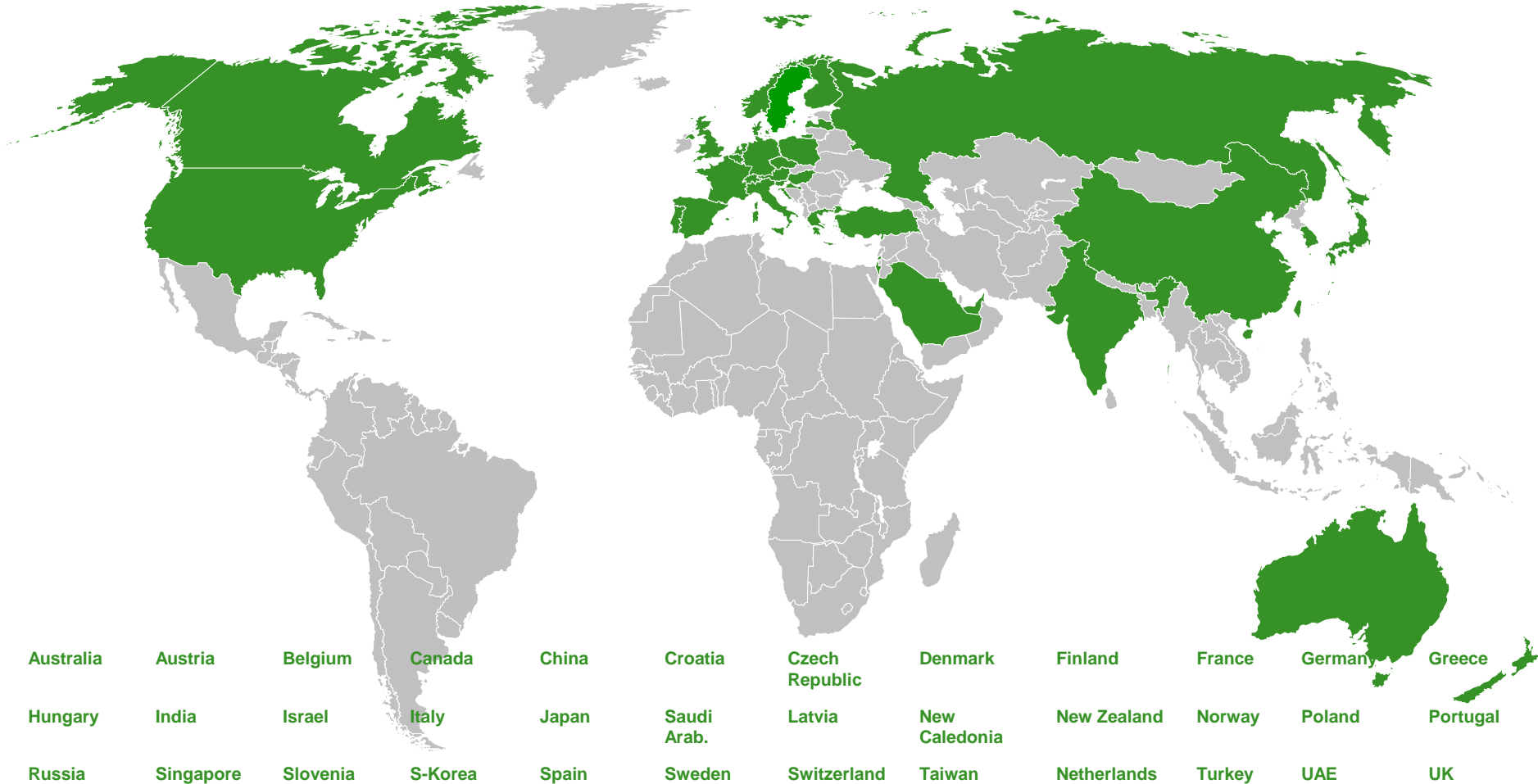
May 2014

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348 Members in 37 countries

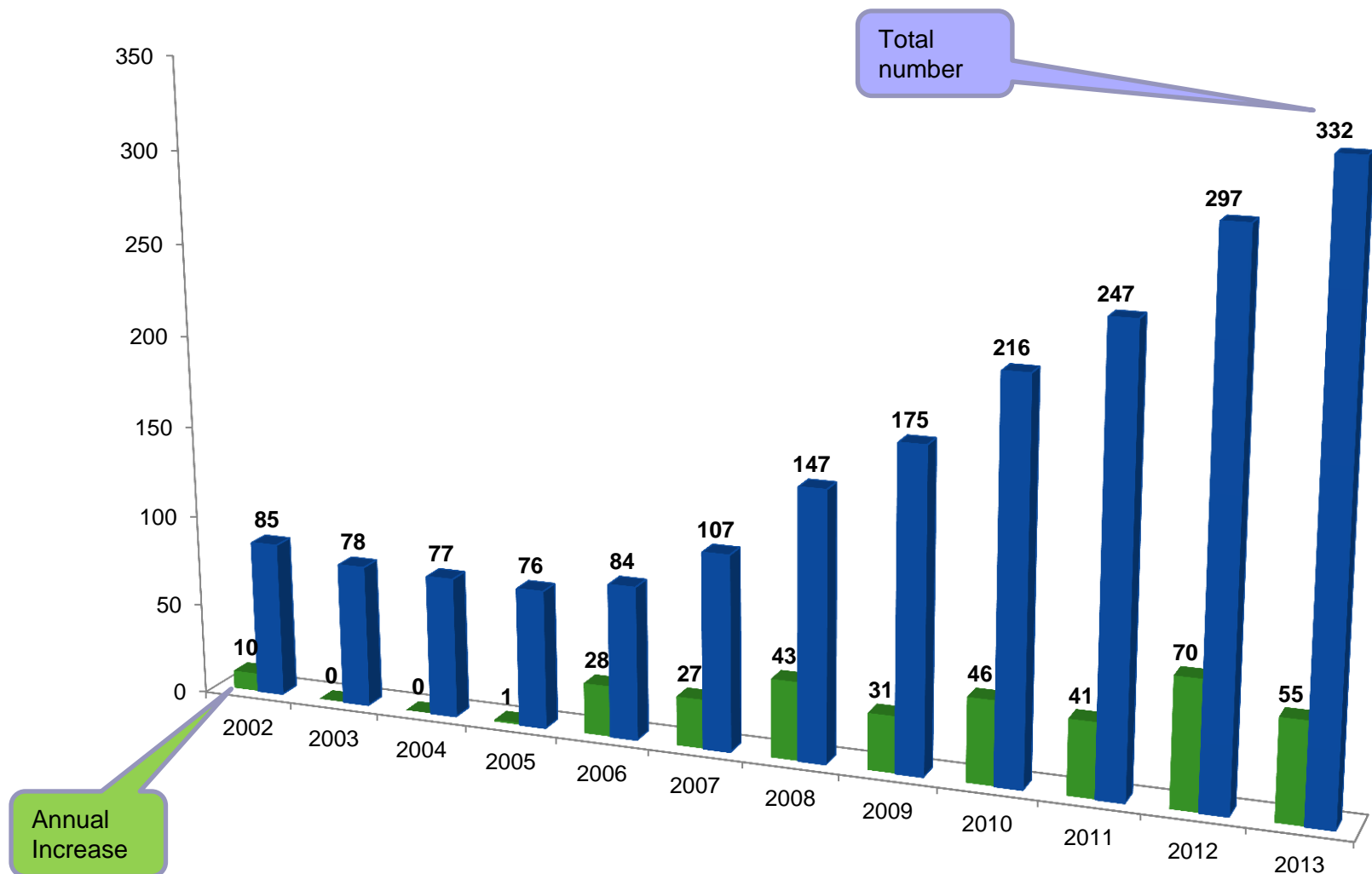


348 Members in 37 countries



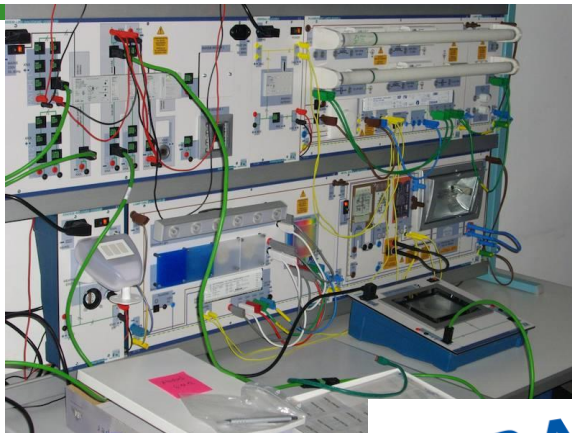
USA

KNX Members

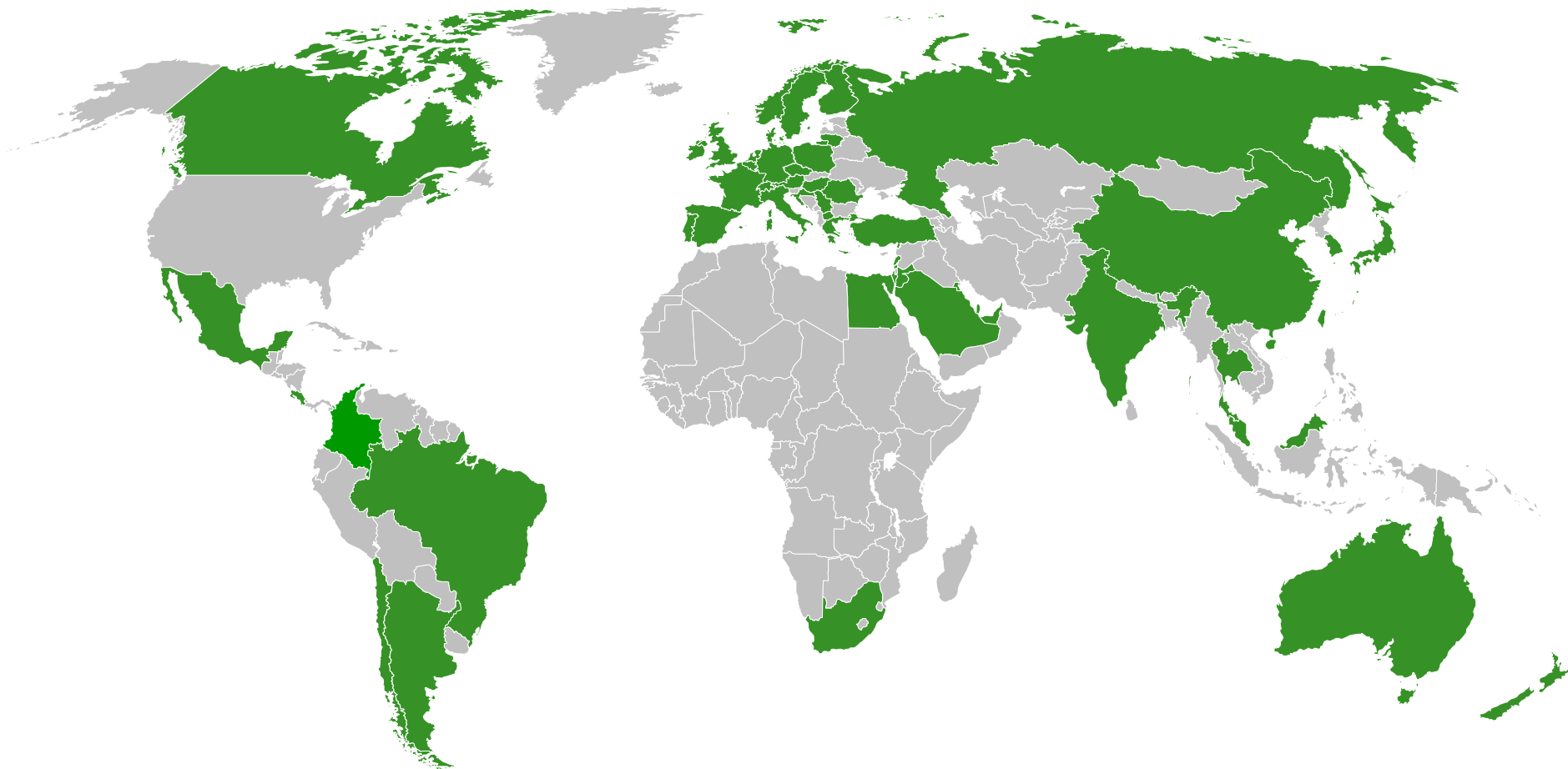




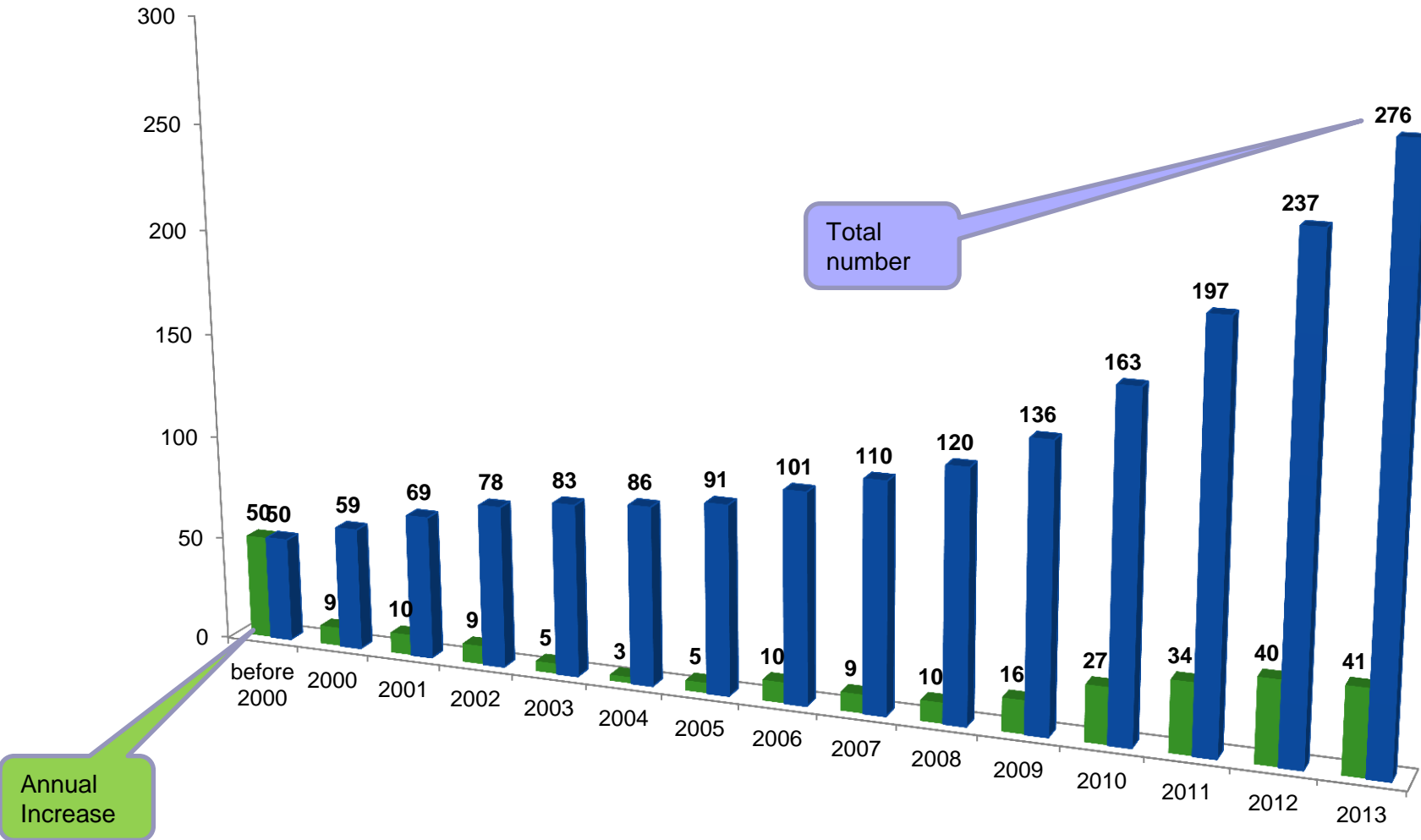
291 Training Centres in 54 countries



291 Training Centres in 54 countries



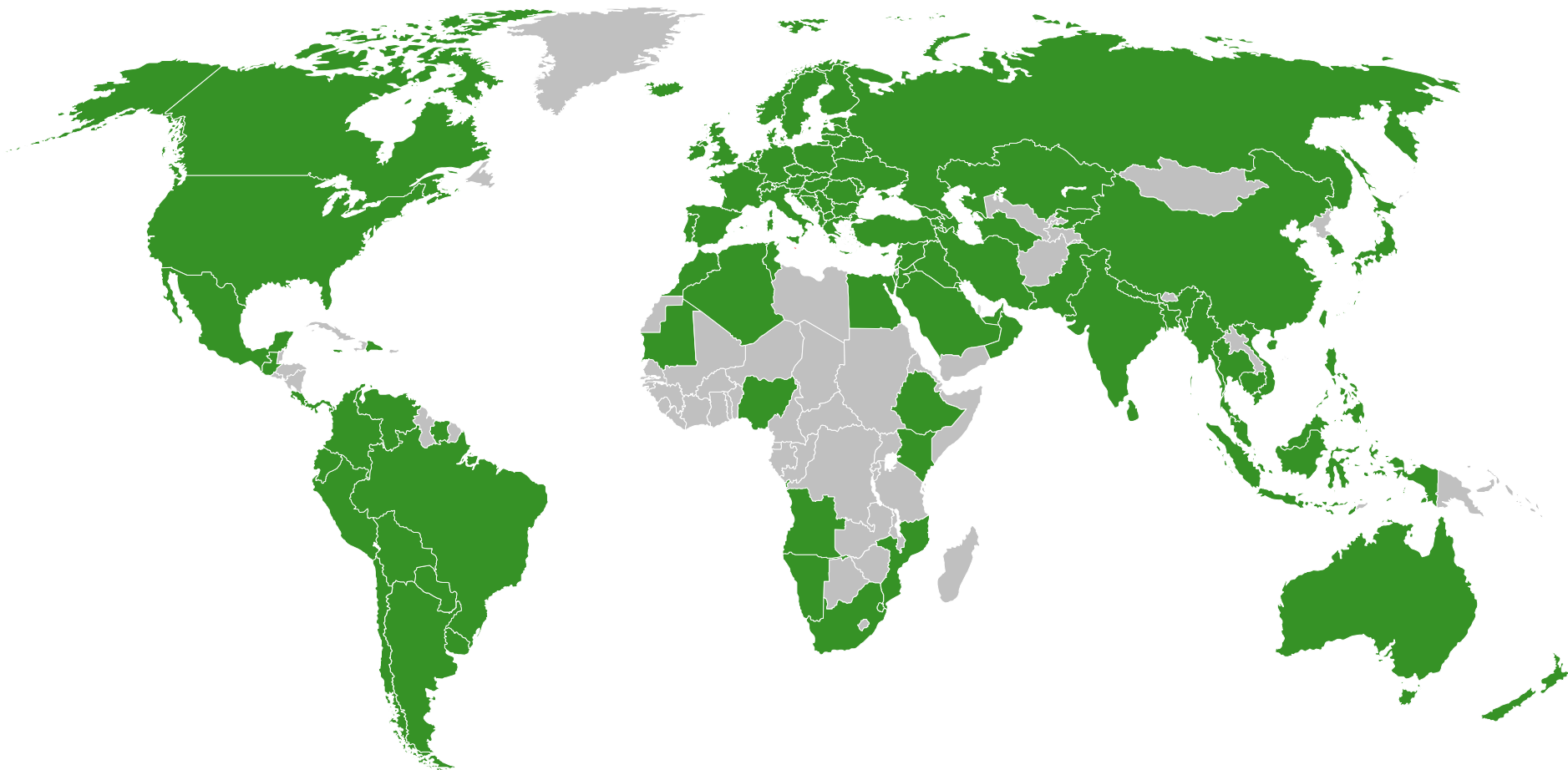
KNX Training Centres



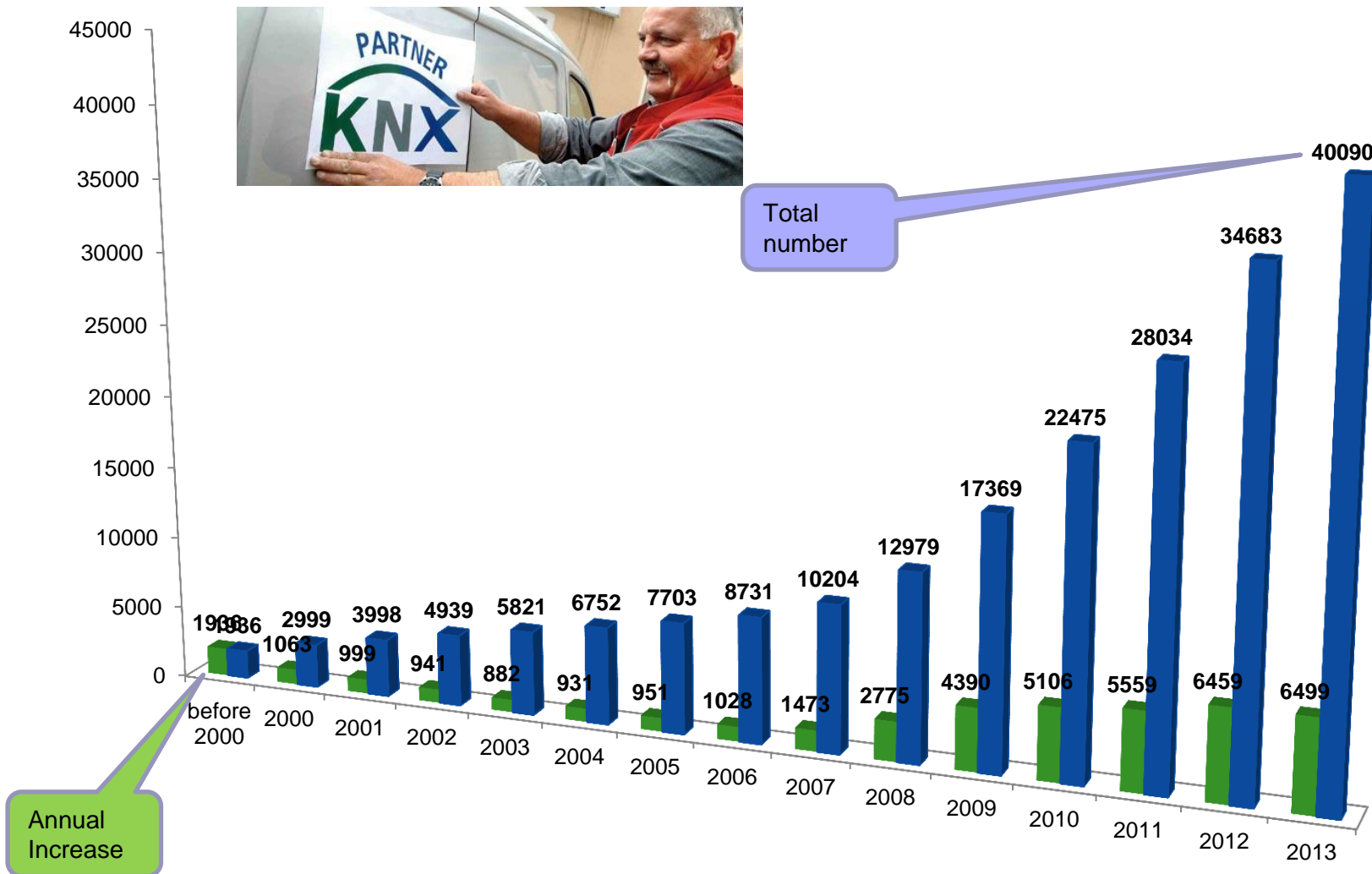
42296 Partners in 127 countries



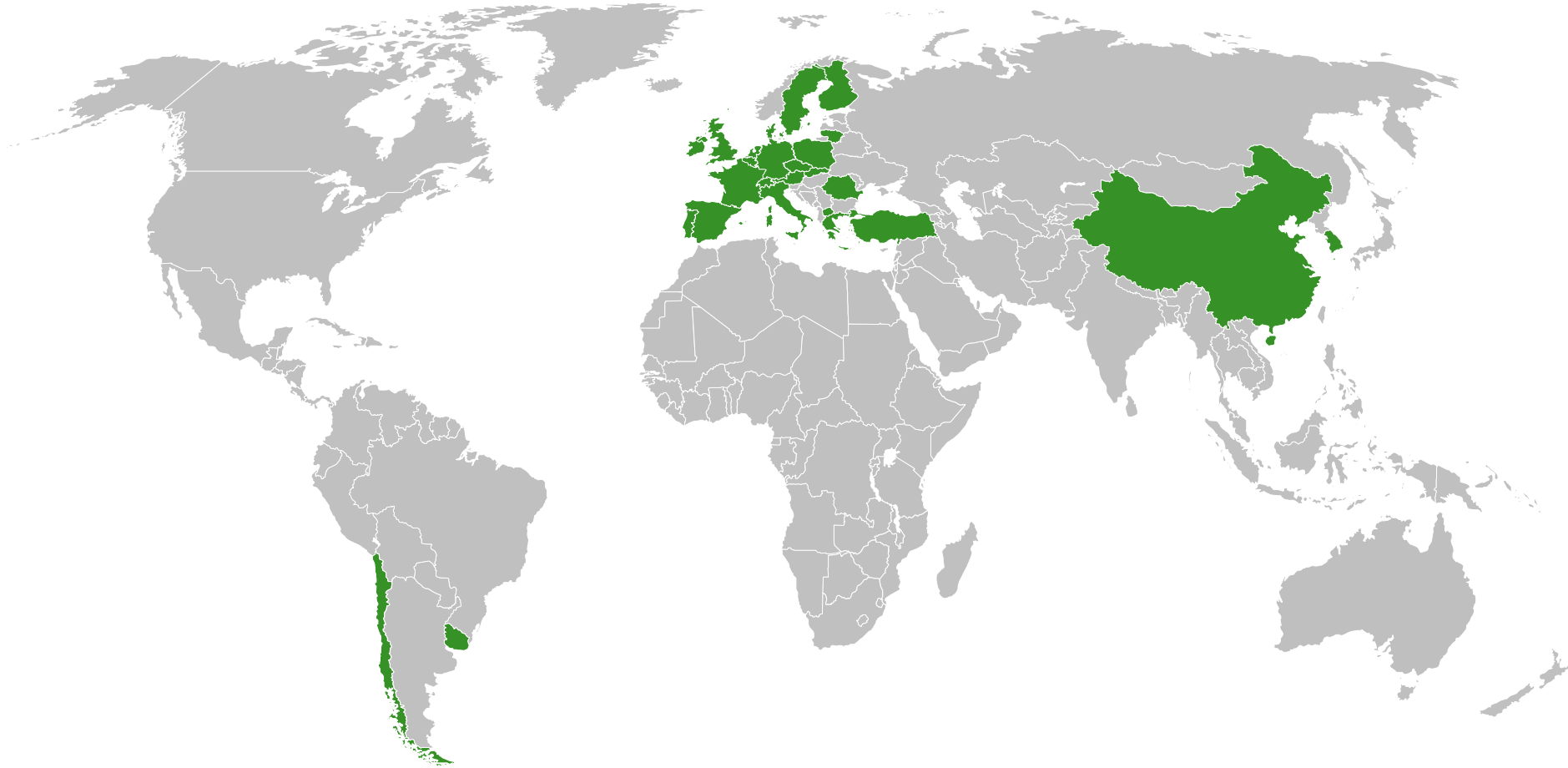
42296 Partners in 127 countries



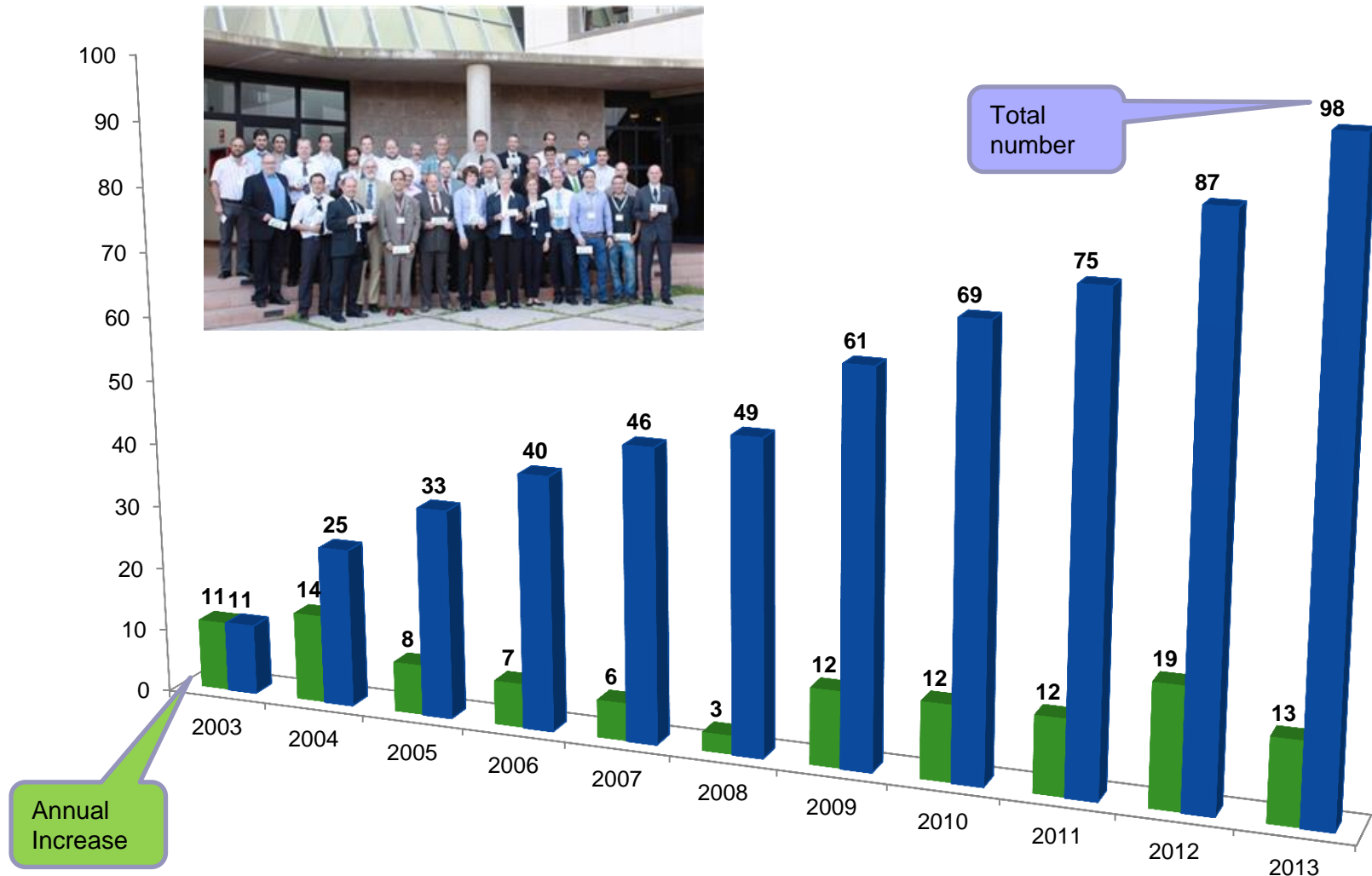
KNX Partners



102 Scientific Partners in 28 countries



KNX Scientific Partners

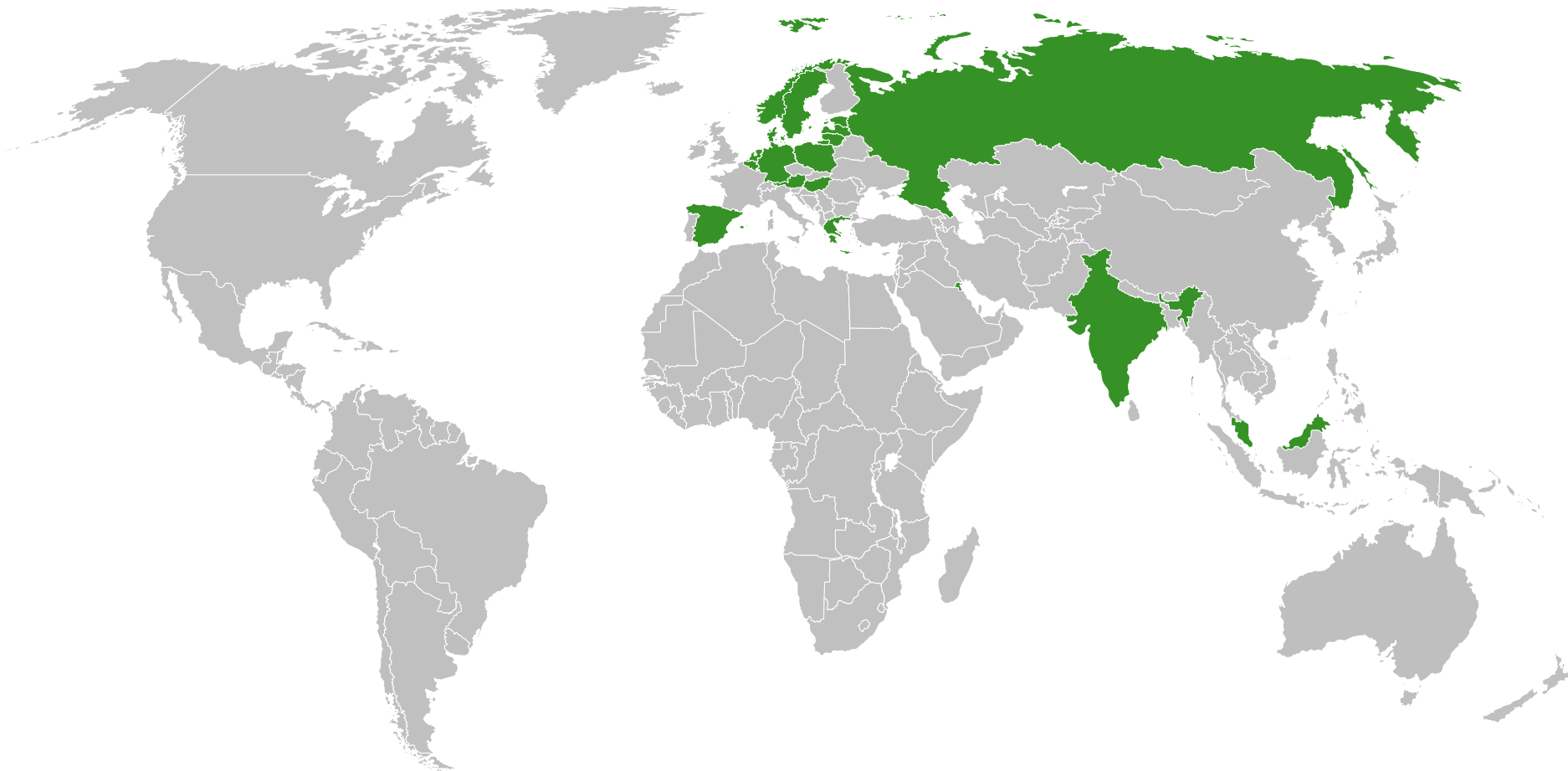


16 Userclubs in 15 countries

Austria
Belgium
Germany
Greece
Hong Kong
Hungary
India
Kuwait
Malaysia
Norway
Poland
Russia, CIS and Baltics
Spain
Sweden
The Netherlands



16 Userclubs in 15 countries



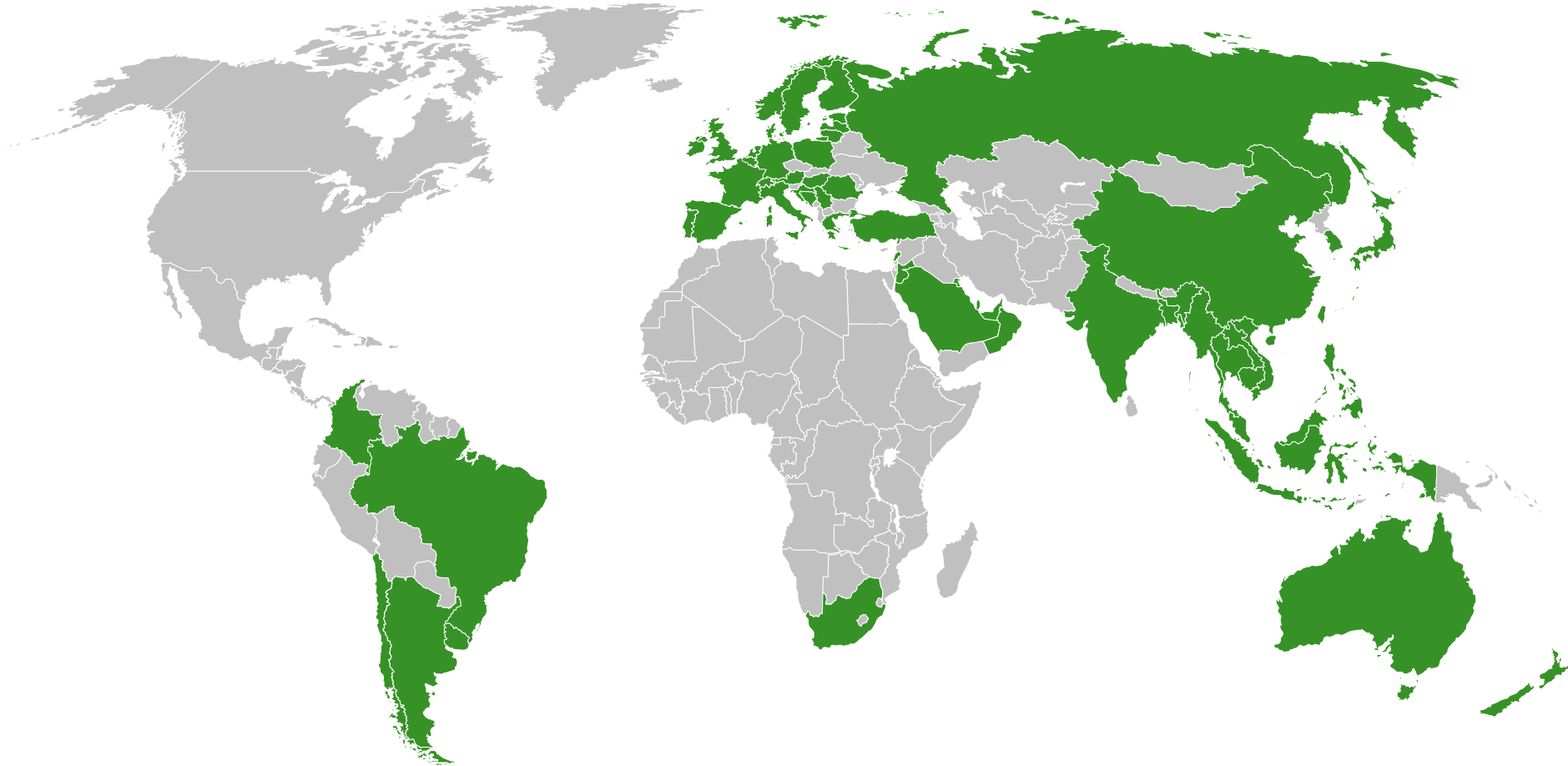
7 Associated Partners



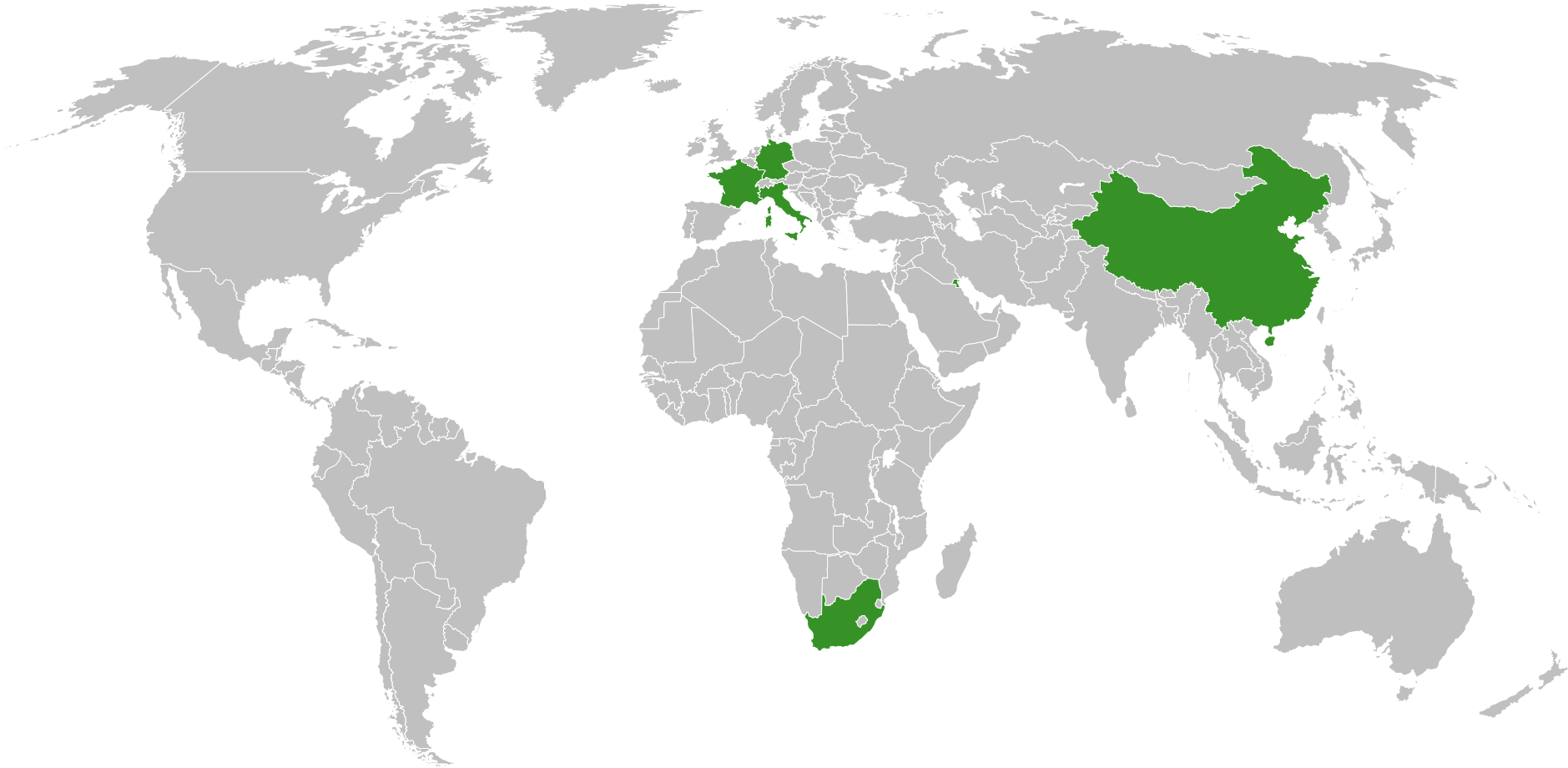
Local representation of KNX: 41 KNX National Groups



41 KNX National Groups



11 Test labs in 5 countries







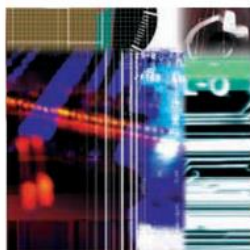
KNX Facts & Figures May 2014



- 348 KNX Members in 37 countries
- 7000 certified product groups
- 42296 KNX Partners in 127 countries
- 291 Training Centers in 54 countries
- 102 Scientific Partners in 28 countries
- 16 Userclubs in 15 countries
- 7 Associated partners
- 41 National Groups
- 11 Test labs in 5 countries
- ETS sold in more than 120 countries

Join the worldwide KNX community





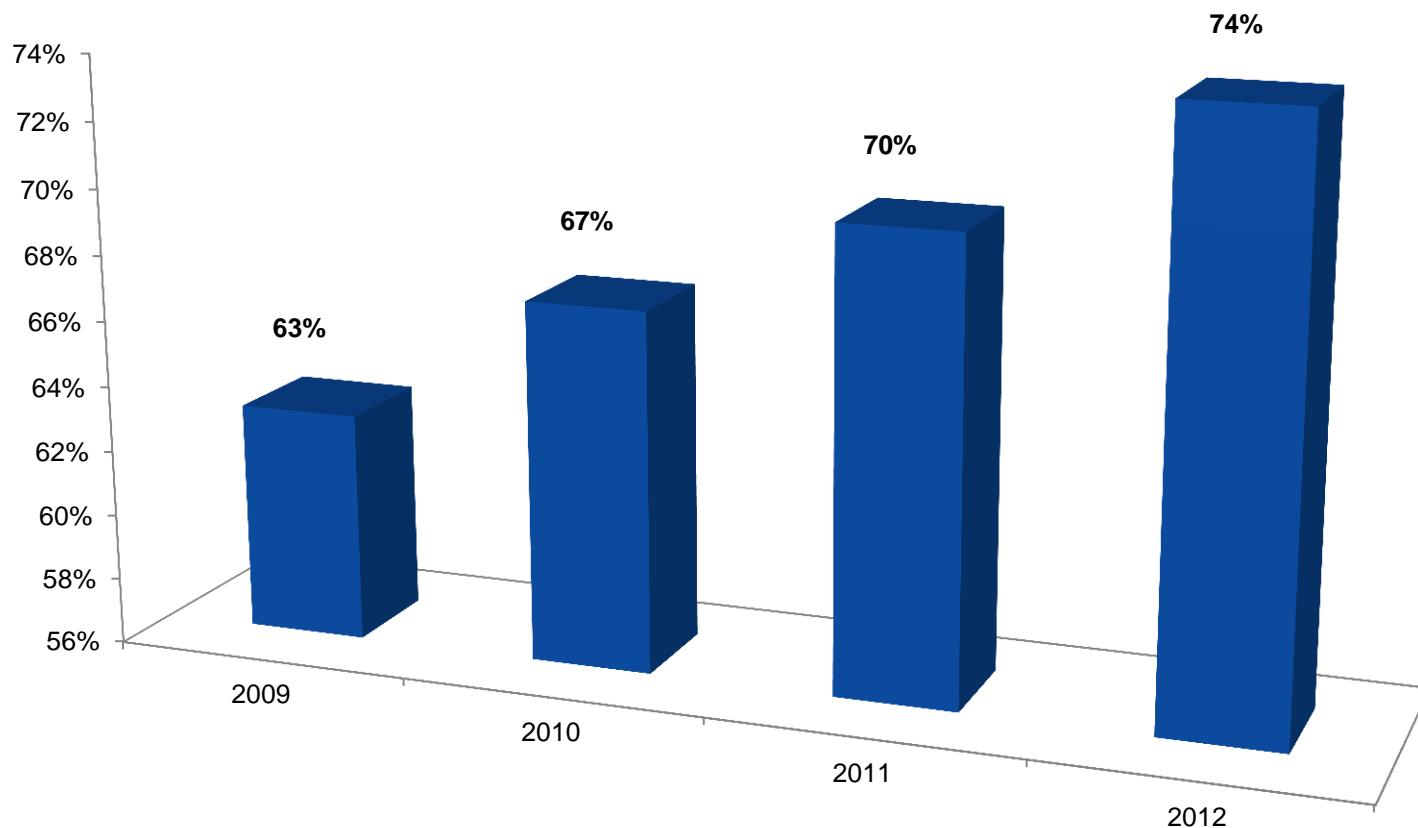
BSRIA

European Smart Home Market Study

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European Smart Home Market Study

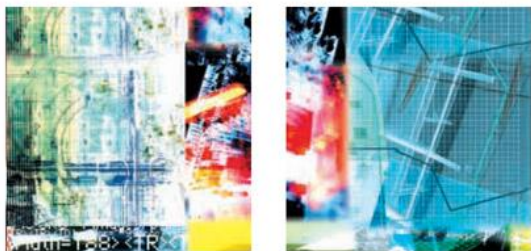
Share of KNX in the total smart home market value



European Smart Home Market Study

„In 2011 the share of KNX-based solutions exceeded 70% of the total market value. In the last three years, the KNX share has been adding three percentage points on average, suggesting the growing importance of KNX“

(„BSRIA - Smart home market: impressive growth; new opportunities“, June 20, 2012)



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KNX city

New business opportunities



From the KNX building to the KNX city

- Buildings are responsible worldwide for...
 - ...40% of the consumption of final energy
 - ...21% of the production of greenhouse gases
 - ...an increasing demand for energy

Energy Efficiency in the KNX Buildings



Energy Savings with KNX in the buildings:

- up to **40 %** with KNX shading control
- up to **50 %** with KNX individual room control
- up to **60 %** with KNX lighting control
- up to **60 %** with KNX ventilation control



Electricity for the City of Salzburg (Austria)



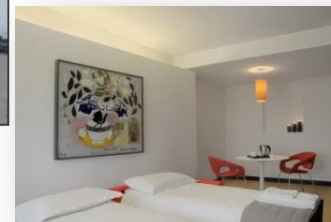
A new bioclimatic office building in Huesca (Spain)



The largest building in the Middle East



Energy efficiency in Guarda Polytechnic Institute



Nerocubo Hotel in Italy



Oundle School, Peterborough (Great Britain)



A family home in low energy standard in Innsbruck (Austria)



Improved energy balance in insurance company (Prague)

From the KNX building to the KNX city

- Cities are worldwide responsible for...
 - ...two third of the total energy consumption
 - ... 60% of the total water consumption
 - ... 70% of the production of greenhouse gases
- More than 50% of the world population live already today in metropolitan areas
 - ➔ Until 2050 it will be up to 70% of the world population

KNX has its focus in the building...

... but considers Smart Grid and city issues



- A “Single solution” doesn’t meet city sustainability objectives
- Smart cities require buildings that interact with the city
- Different fields need to interact. Examples:
 - “Mobility” effects “buildings”, e.g. charging of electric vehicles
 - „Energy generation“ affects buildings, e.g. decentralized generation on roofs of “buildings”.
 - The building affects the “City”, e.g. by feeding in surplus energy into the grid.



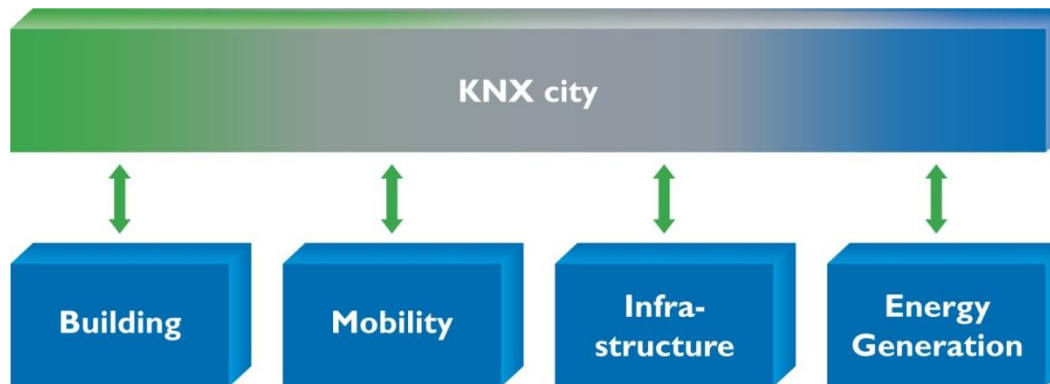
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➔ **KNX city sets a new focus with existing KNX technologies in the buildings**

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- The diagram illustrates the Internet of Things (IoT) concept. It shows three interconnected networks: a 'car park' with yellow 'E-Vehicle' nodes, a 'Building' with various nodes including 'E-Vehicle', 'HVAC', 'E-Gen', 'E-Water', and 'E-Light', and another 'Building' with 'E-Vehicle', 'E-Water', 'E-Light', and 'E-Gen' nodes. All three networks are connected to a central 'WWW' hub.

From the building to the KNX city

KNX city offers solutions in the interaction of buildings, mobility, infrastructure and energy generation



KNX city

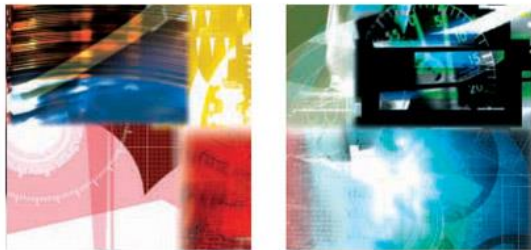


KNX city - Taiwan



KNX city - China





**Thank you very much
for your attention**

**For any questions – Contact
info@knx.org – www.knx.org**

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