

ELECTRONIC COMPONENTS AND SYSTEMS IN THE ENERGY DOMAIN

Panel Discussion 2

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Center for Energy, Electric Energy Systems
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AIT

over

1,300
employees

bmvit

8 Centers

Austria's largest
RTO

Applied Research

Infrastructure Systems

System
Competence

Federation of
Austrian Industries

Next Generation
Solutions

2 Subsidiary
Enterprises

140
m EUR total revenue

Tomorrow Today

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Since 2012 AIT Center for Energy



2000-2006 RWTH Aachen



2004-2005 Queen's University Belfast

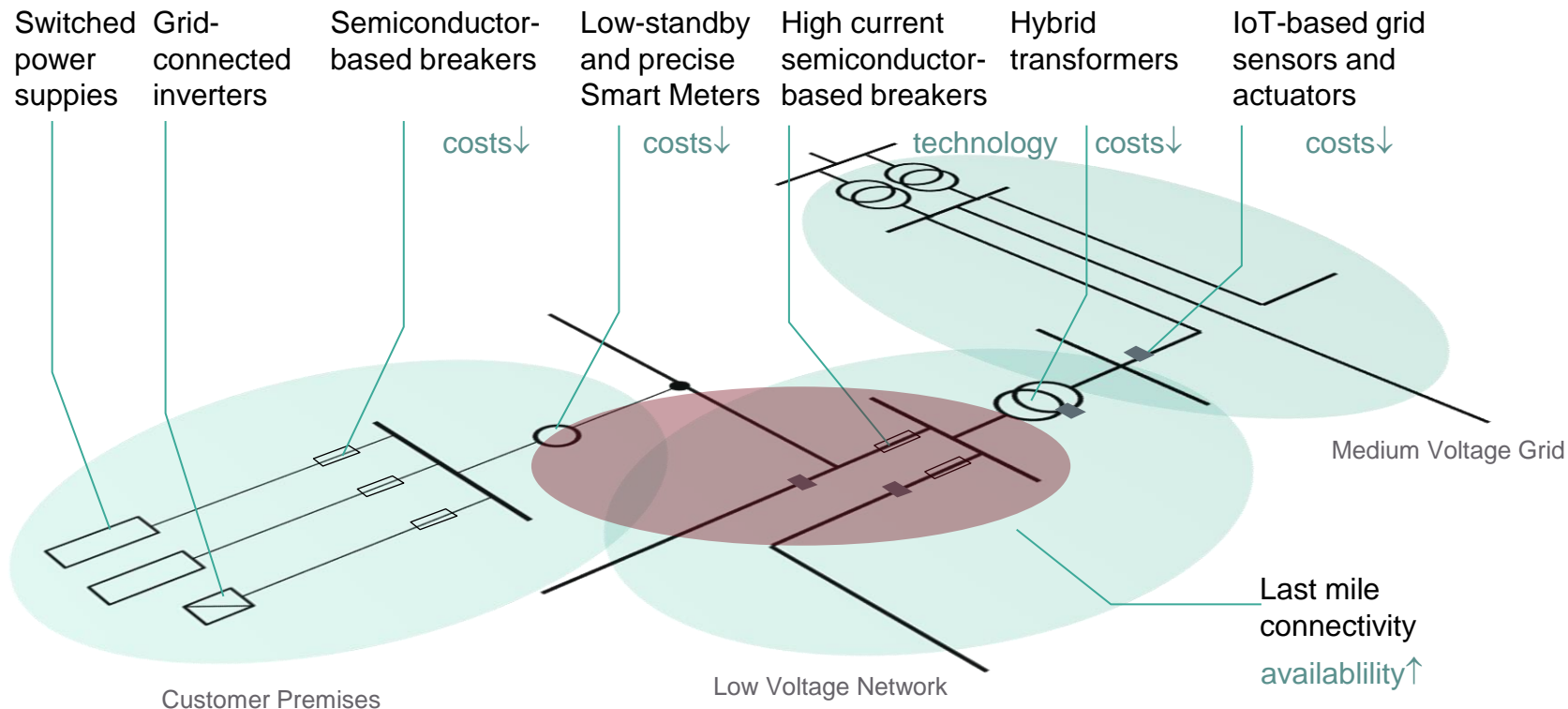


2004-2005 ECIT Belfast

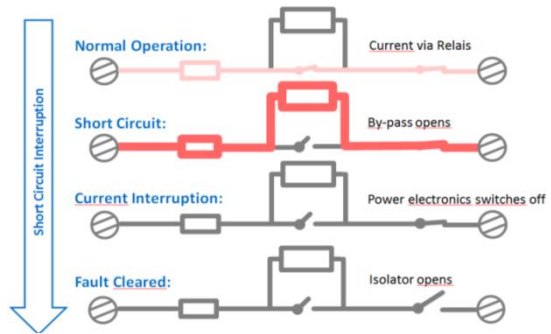


2006-2012 TU Wien
Institut für Computertechnik

POTENTIAL APPLICATIONS IN ELECTRICITY DISTRIBUTION GRIDS



TECHNOLOGY FOCUS: POWER ELECTRONIC SWITCHING



Hybrid switching principle of operation

Further evolution: solid state switching



iniGrid Smart Breaker on
Ars Electronica Festival, Linz, 2016

APPLICATION FOCUS: DISTRIBUTION SUBSTATION EVOLVEMENT



How to reduce costs? Tighter integration of low voltage switchgear

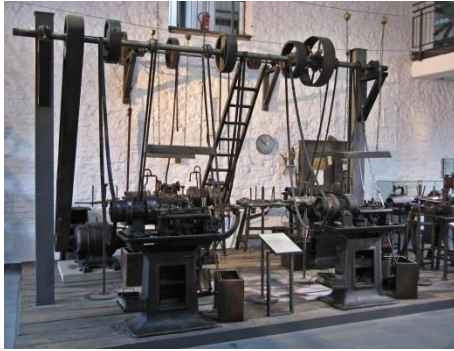


How to achieve effective grid control? Hybrid transformers enabling non-discrete voltage control

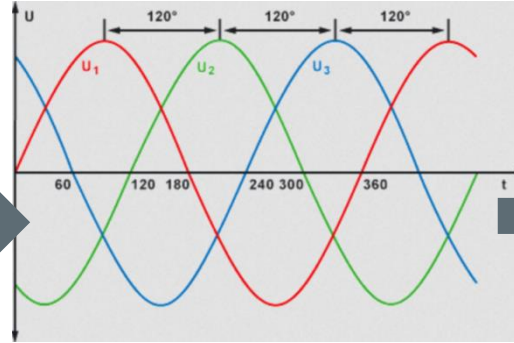


How to reduce interruption times? High current power electronics switching for AC and DC applications

OUTLOOK



Transmission belt system



Three-phase electric AC system



Inverter-based AC system



Rotation speed = const



Frequency = const



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