

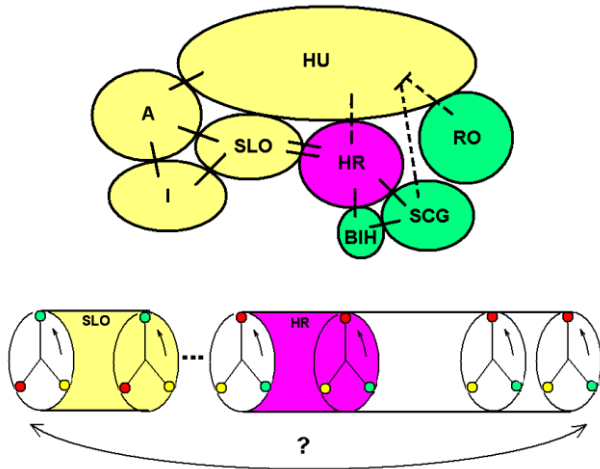
Resynchronisation – As Hungary Sees

Zoltán Tihanyi
Deputy CEO, MAVIR

The Importance Of It

- Extended market → increased trading possibilities → more reliable and economical supply of electricity.
- Geographical extension of the synchronous system → becoming a centrally located power system instead of a peripheral one → more stability, higher reliability.
- More interdependencies → need for closer coordination among the TSOs – and all the other stakeholders.

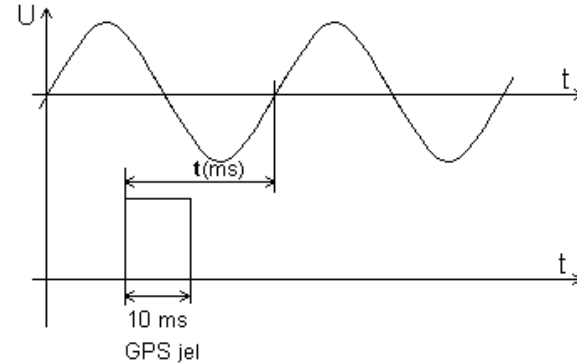
Twisted Phases - I



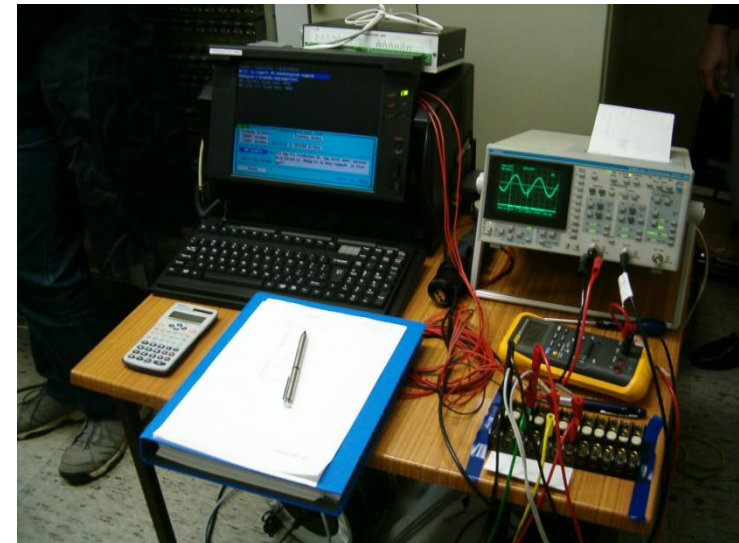
„The Balcan Sausage“

	UCT	SCG Mlad.←Ernest.		HU Sfalva. ←Paks		HU Heviz←Top.		$\Delta\phi$
1	11.52	0,R,L1	329.4	R,L1,0	201.6	R,L1,0	205.2	-127.8
2	12.02	4,S,L2	117.0	S,L2,4	347.4	S,L2,4	352.8	-129.6
3	12.10	8,T,L3	268.2	T,L3,8	138.6	T,L3,8	144.0	-129.6
4	12.18	8,T,L3	41.4	R,L1,0	32.4	R,L1,0	37.8	-9.0

Difference between the identical phase angles



The method.



Mobile Lab in Tumbri.

Twisted Phases - II

- The twisted phases of the Croatian Grid were realised in 1995, and confirmed during the preparation for resynchronisation.
- The measurements were designed and organised by MAVIR.
- Historical reasons
- Systematical change of the phases of all cross-border lines in Croatia was made by HEP in September, 2004.

They Led The Preparation



UCTE Executive Team Meeting – Zagreb, 13-14. September, 2014

Lajos OROSZKI
József ZERÉNYI

Prospectives

- The meshed grid in the region serves further market integration, security of supply through fair access to the available resources, large scale integration of renewables, etc.
- At the same time new challenges are faced:
 - Grid development to facilitate more trading
 - Closer coordination to ensure reliability
 - Huge amount of information to be exchanged and published
- **It is time for phase-shifting again!**