



5th International Seminar on Underground Space
Health & Safety in Underground Space
October 18th, 2019, Lisboa, Portugal

Road Tunnels: Experimental period, assessment of systems and equipment in operation. Operation team Training

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FGU Fachgruppe für Untertagbau
GTS Groupe spécialisé pour les travaux souterrains
GLS Gruppo specializzato per lavori in sotterraneo
STS Swiss Tunnelling Society

Road Tunnels: Experimental period, Systems and equipment in operation Operation team Training

> Safety in road tunnels

> Experimental period

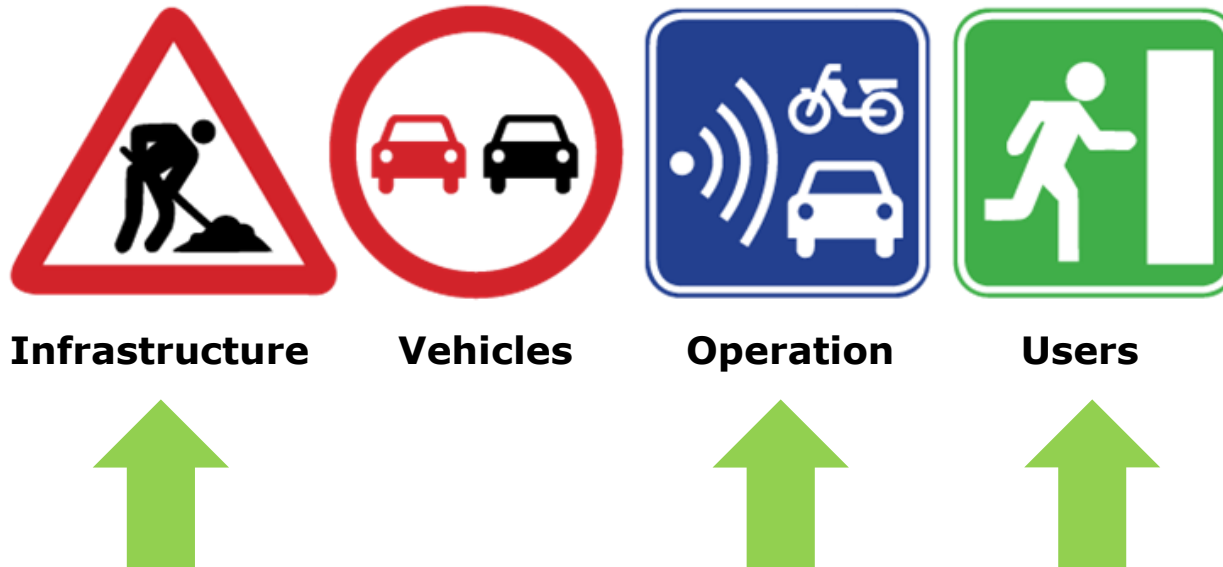
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Safety



four pillars

Road Tunnels: Experimental period, Systems and equipment in operation Operation team Training



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> Experimental period

>last months of construction<
&

>first months of operation<

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> Infrastructure (last months of construction)

> testing, Commissioning, official approvals

> the challenge <

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(Operation)

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> Operation team

- > Control center operators
- > Maintenance team
- > Road assistance team

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> Operation (team training)

- > Emergency Plan
- > Operation Plan
- > Maintenance Plan

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> Operation (know how to act)

- > Fire
- > Pollutants
- > Snow, ice, thunder, high temperatures
- > Degraded operation (e.g. electric failure)

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> Operation (know how to act)

- > Equipment's installed
- > Many events at the same time
- > Operators must rely on the “machine”

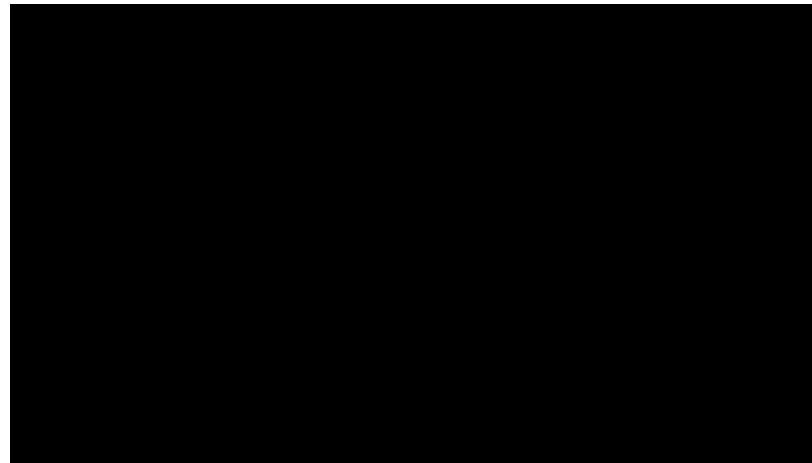
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(Users)

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> Users behavior



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> Safety flyers



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INTERNATIONALE DES TUNNELIS
ET DE L'ESPACE SOUTERRAIN
ITA
INTERNATIONAL TUNNELING
AND UNDERGROUND SPACE
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Thank you

Dirceu Santos



Società Italiana Gallerie
Italian Tunnelling Society



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