



VZK Tagung Gesundheitsversorgung  
Kongresshaus Zürich, 8. November 2022

# Robotik in der Rehabilitation

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**ETH** zürich  
Der **Balgrist**

# Was ist ein Roboter?

## *Definition 1*

**Eine Maschine, die wie ein Mensch  
aussieht**



Schreibautomaten,  
Jaquet-Droz, ca. 1770

Metropolis 1927  
Fritz Lang







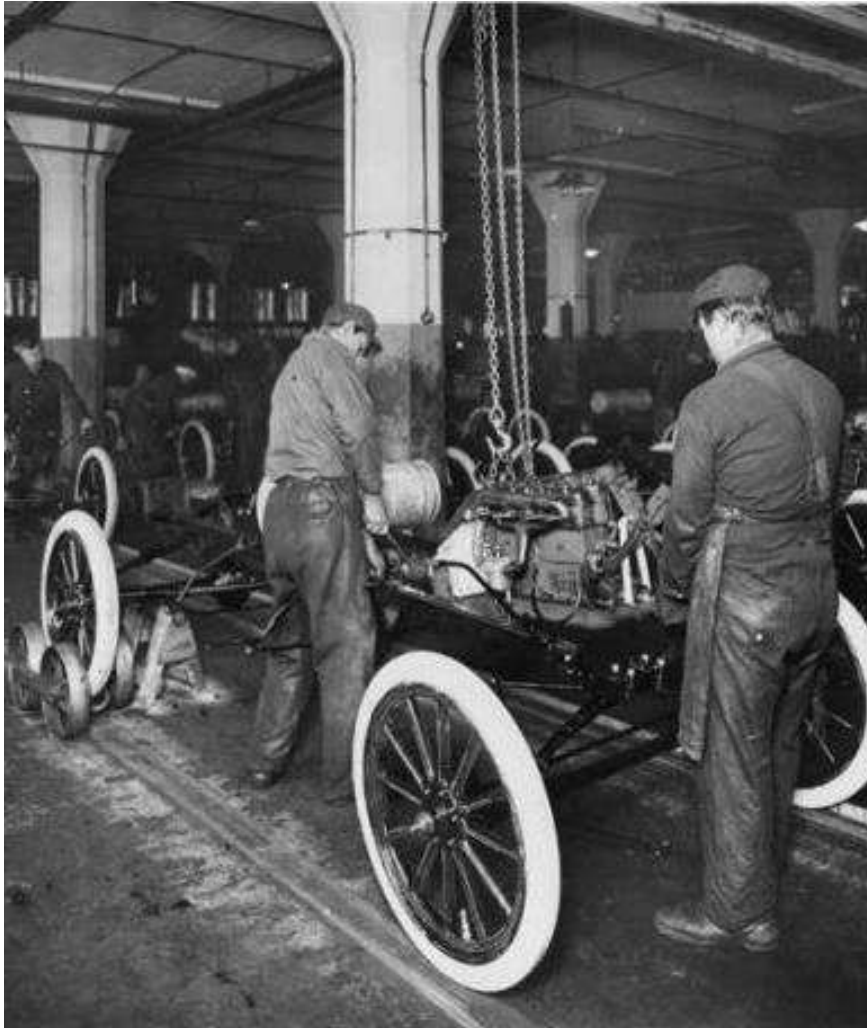
Terminator  
1984-2009

## *Definition 2*

**Eine Maschine, die sich wie ein  
Mensch **verhält****



# Industrieroboter





# Serviceroboter



ROOMBA 520

# Serviceroboter?



# Robotik in der Rehabilitation





Riken, Japan &  
Tokai Rubber Industries (TRI)



Waverley Glen, Lifting Systems









Pepper,  
Softbank

Hasbro







Roboterseehund „Paro“  
Takanori Shibata, AIST, Japan



# Dekubitus Prävention

Hill-Rom



Intensive Care Bed „TotalCare SpO2RT“

# Frühmobilisation mit Erigo®





# Frühmobilisation mit VEMO®

vemo



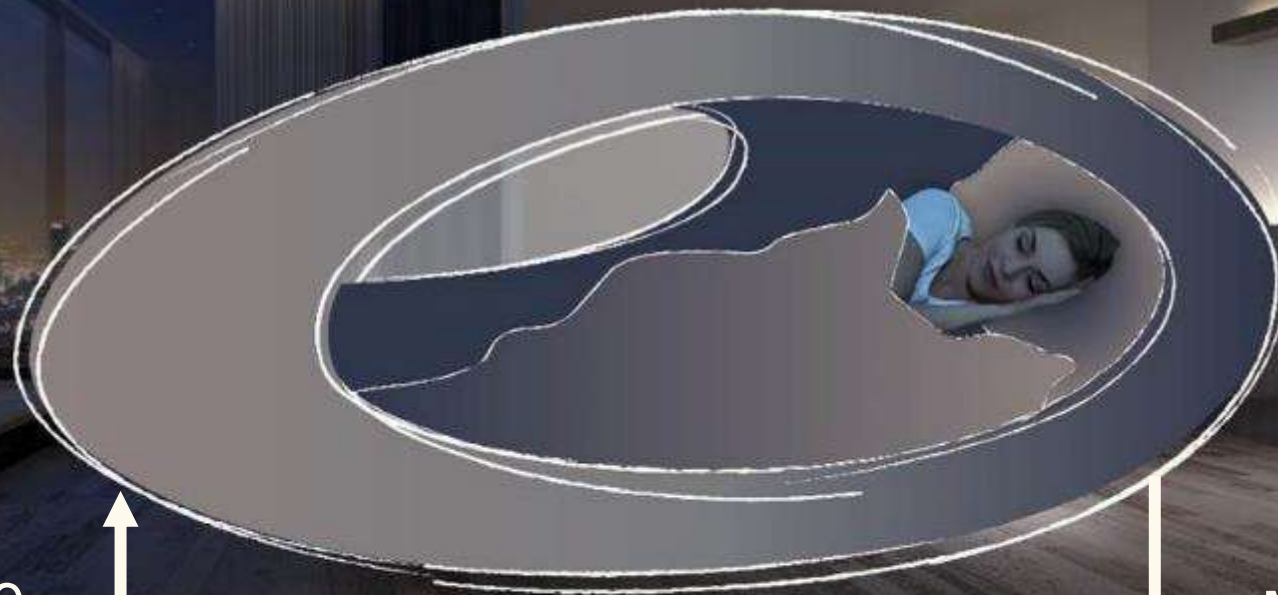


# Somnomat: Therapie- und Lifestyle-Bett

Mechanische  
Intervention

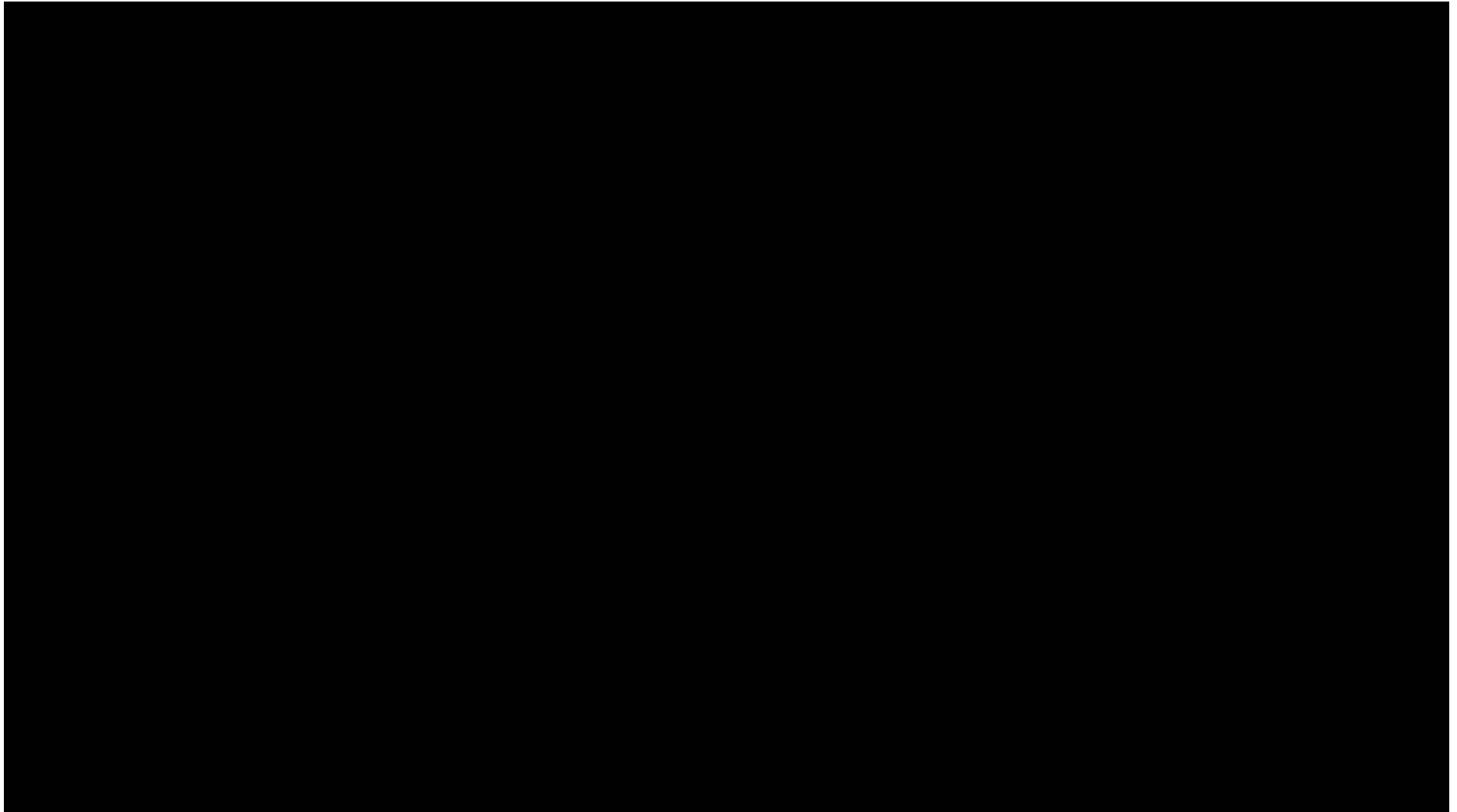
Datenverarbeitung

Messung





# Somnomat Nachtmessungen







# Till, 10 Jahre alt

Leidet unter Stoffwechselerkrankung (Mitochondriopathie)

Gelähmt, Insomnie





# Anti-Apnoe Bett





# Anti-Apnoe Bett





# Hirnschlag

16'000 neue Fälle  
pro Jahr in  
CH





A photograph of a middle-aged man with a beard and glasses lying in a hospital bed. He is looking towards the right. The bed has white pillows and a blue patterned blanket. In the background, there is a medical monitor and other equipment on a stand.

**Mindestens 90%  
der Zeit INAKTIV**



# Bewegungslernen von Kindern



# Therapieroboter für das Gangtraining



GaitTrainer



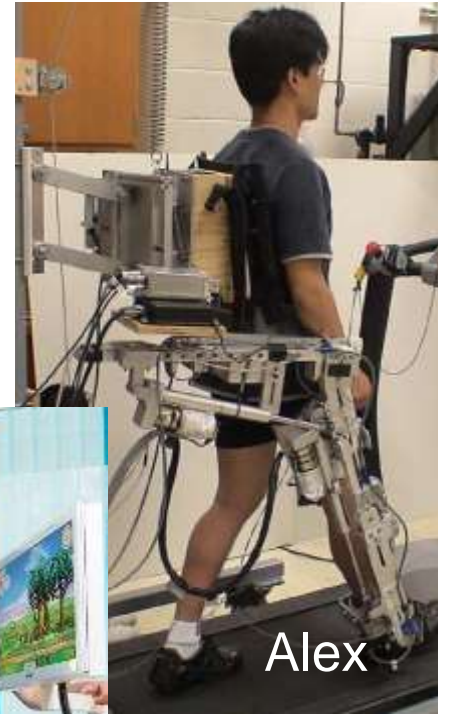
Lopes II



G-EO



Lokomat



Alex



# Lokomat®

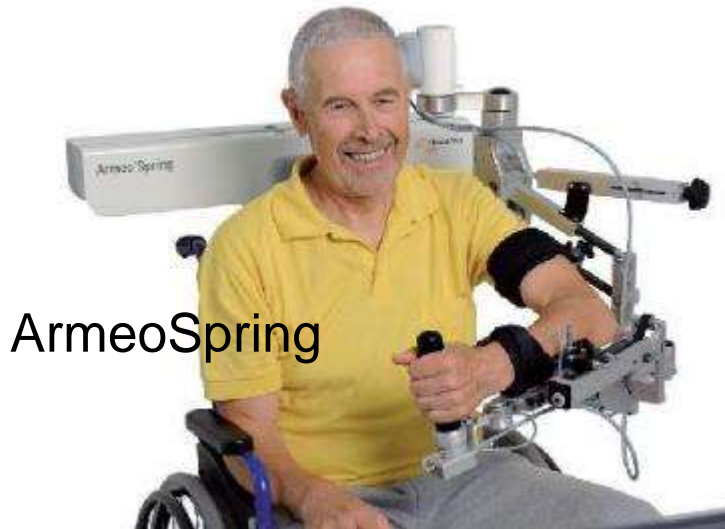
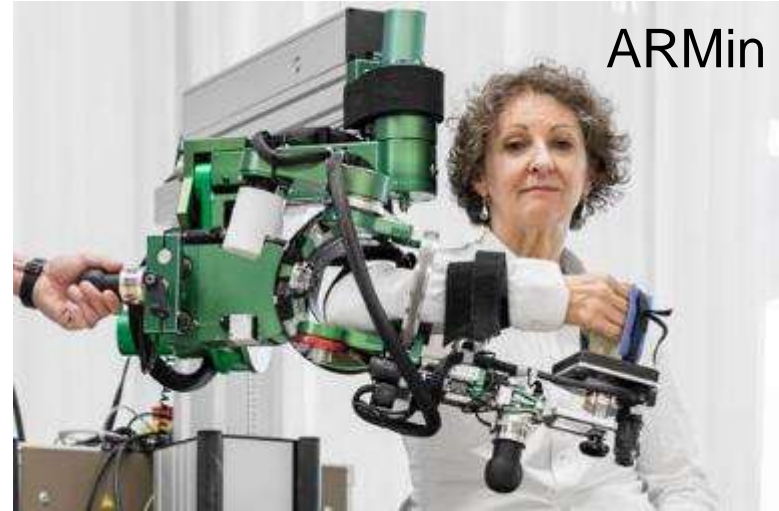
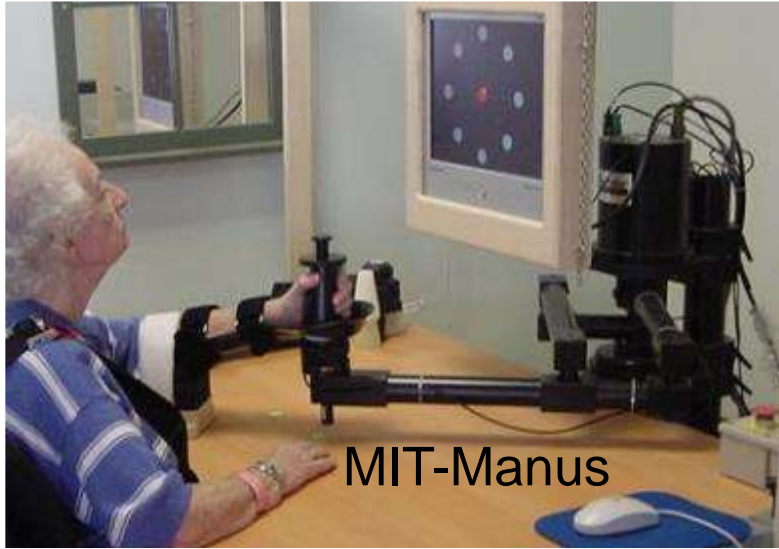








# Armtherapieroboter



# Armtherapieroboter ARMin





# Therapieroboter ArmeoPower®



# Therapie, Training



# Mobilität, Assistenz





# Roboter zur Unterstützung von Alltagsaktivitäten



Jaco, Kinova



Bestic, Camanio Care



# Neuartige, motorisierte Rollstühle

Genny™ Mobility



BRO, Scewo (ETH)



iBot (neu)





C-Leg (Genium)  
Ottobock GmbH

**Mehr als 100'000 Geräte verkauft**



© Tuesday 8 May 2012 09:35 EDT

## Paralysed Claire Lomas finishes London Marathon 16 days after it began

32-year-old is greeted by crowds of supporters as she becomes first to finish marathon in bionic suit







# Der Myosuit



[myo.swiss](https://myo.swiss)

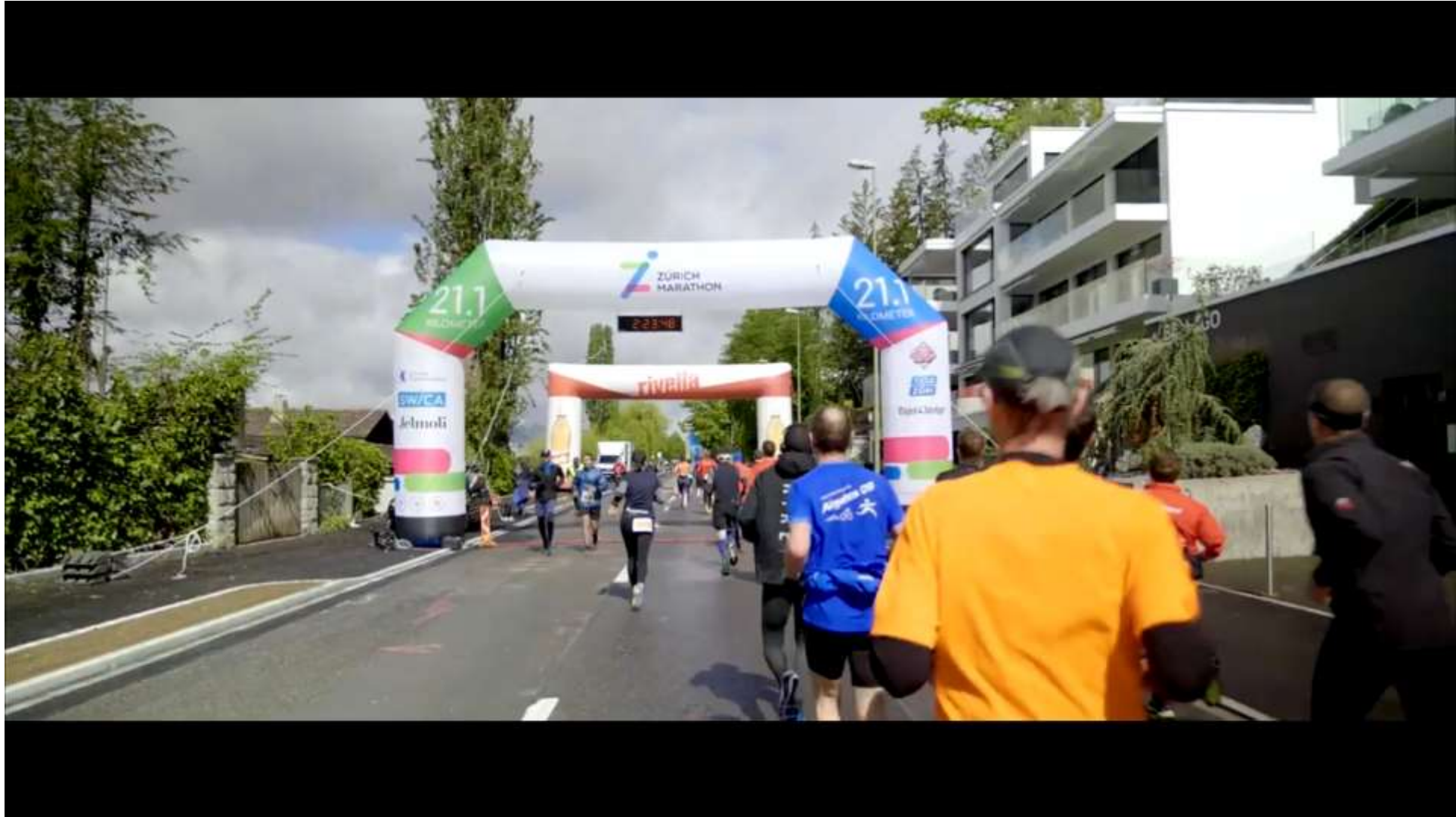


[@myoswiss](https://twitter.com/myoswiss)



[info@myoswiss.com](mailto:info@myoswiss.com)





# Technische Herausforderungen



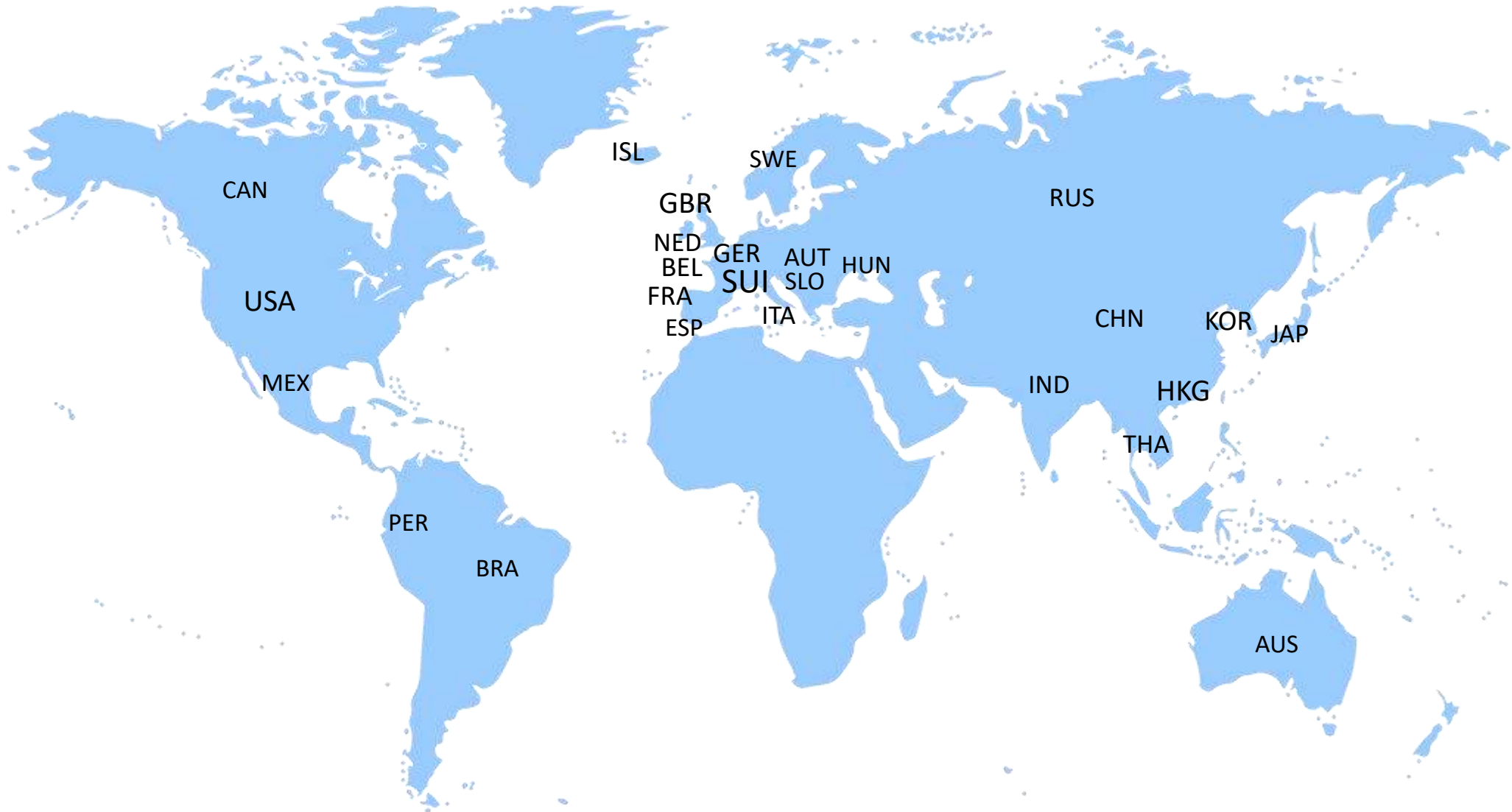


# SWISS Arena Kloten, Zürich, 8. Oktober 2016





# 66 Piloten aus 25 Ländern











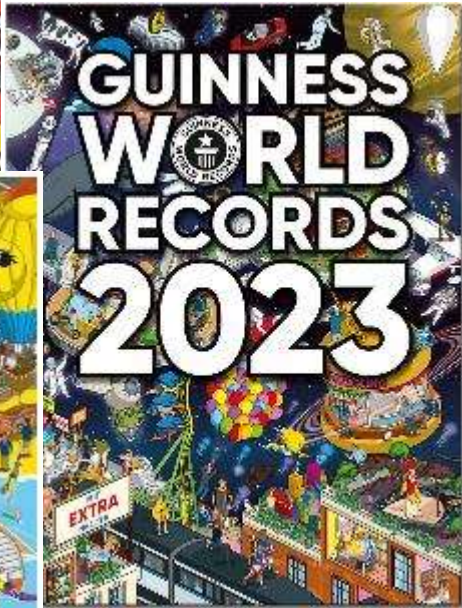
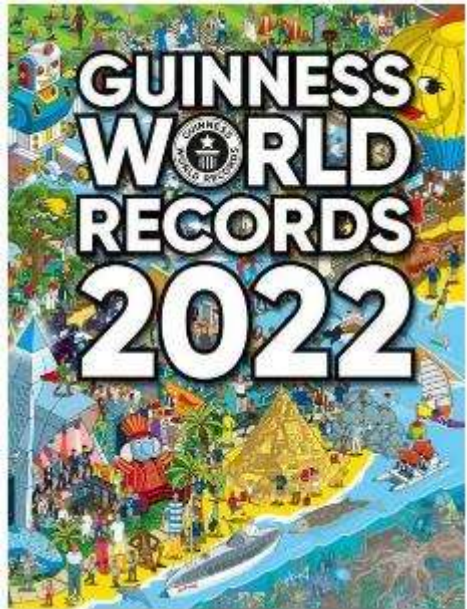
BBC: Most Striking  
Photo of the Year (Oct 2016)



# Sechs Disziplinen









# CYBATHLON & Globi



# Cyathlon Movie (Announcement)