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Association Médicale de Perfectionnement en Appareillage Nationale

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# **CLERMONT FERRAND 2018**



## WANDERCRAFT ORDINARY LIFE FOR EXTRAORDINARY PEOPLE

## Making Wheelchair Users Walk Again

Presentation to AFA-AMPAN, June 2018

## Extraordinary people in search of an ordinary life

## 30+ million persons

Struggling for activities of daily living, 3 times less access to jobs and education

Struggling with severe diseases associated with wheelchair sedentarity

All with one life priority: to improve their





Wandercraft Confidential - May 2018

## Needs of PMR profesionnals and patients

#### WANDERCRAFT



# Health

## More effective inpatient therapeutics

- **1. Realistic gait** for effective rehabilitation
- **2.Dose**: repetition + intensity / efficacy
- 3. Autonomy perspective
- 4. Pursue treatment as outpatient

# Autonomy

## **Daily life + outpatient therapeutics**

- 1. Stable realistic walk to be truly autonomous
- 2.Safe several hours / day
- 3. Urban obstacles handling
- 4. Pursue treatment as outpatient

Sources: Wandercraft Scientific Committee, User Group, patient associations, patient interviews, seminars, interviews of Rehab Centers including CMPR APAJH Pionsat, Hopale Jacques-Calvé, CM Kerpape, CHU Lille, CHU Henri-Mondor, Villa Beretta, Royal Buckinghamshire Hospital, Barrow Dignity Health, Shirley Ryan Ability Lab and Chicago Rehab, COS Bobigny, Hopital Foch, Clinalliance, Clinique La Chataigneraie, Pasori, Stell, St Martin, Institut de Myologie

## Technology for realistic gait is emerging

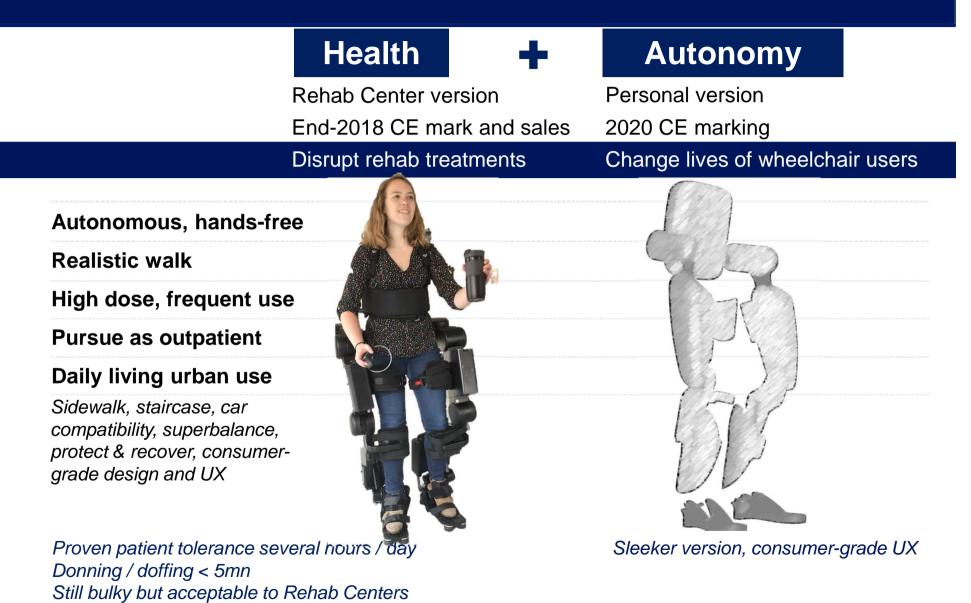
Dynamic robotics allow to stabilize bipeds managing permanent unbalance.

Require complex algorithmics, mechatronics and mechanics, not available 10 years ago.

Wandercraft is today the only commercial company mastering these technologies



## 2018 Rehabilitation Center device, 2020 Personal exo



Short stride to accomodate patients joint restrictions

# 2017 pre-production prototype delivered 1st autonomous walk in clinical trials

2017 Clinical trials : safety and performance, 10 SCI patients ASIA A-B



2017 prototype achieved worldpremiere standing up and walking

Yet gait was rough with foot thudding, excessive torso swing and forward leaning

Intensive work with therapists led to improved 2018 exo to be CE marked.

# 2018 production exo: improved gait and balance, work in progress

### WANDERCRAFT





Pilot is an engineer, not a patient, 2018 version

## Roadmap



017	Stands up, walks,
	sits, hands-free

H1 2018 Improved gait

H2 2018 Realistic gait with longer stride

2019 Assist + resist, therapist in the loop

Tests of Personal version

2020 Personal version

Kids, Elderly

Clinical pilot trial with 10 complete SCI patients

**Clinical trials** 

CE marking

Distribution to Rehab Centers

Clinical plan: post-stroke, neuromuscular pathologies, clinical proofs

Reimbursment schemes