
immersion4
“Making the Cloud cool again”
The Natural Path
“Changing for a Cloud based on eco conservation without pollution emission & water consumption Paradigm, E-waste efficient”
October 2019
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Digitization is eating world's water and energy. We need to act. N

Immersion4 CEO, Serge Conesa, HP World Congress, Las Vegas, June 2019

Click on the picture to access the video



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Immersion4: At a glance

- **The Company**
- The Issues we address
- Our Solutions
- Outcomes
- Voice of customers
- Labels

Immersion4
Founder & CEO: by Serge Conesa
HQ: Lausanne, Switzerland
Created in 2017

https://www.immersion4.com

Worldwide represence:
Lausanne (HQ Sales & Marketing)
Annecy (R&D)
Las Vegas (US Base)
Dubai (MENA Base)
Tokyo (Japan HQ)

20 partners worldwide

Capital Structure

100% Privately owned

Q4 2019 Serie A closing to scale global deployment

Business Model
Franchises / Licences
Circular Economy

Local production plants by regions avoiding shipment and creating local jobs



Subsidiaries

CoolLabs (Electronic Lab)
DataCenterFree (Modular data centers)

Technology Partnerships

Hewlett-Packard Entreprise

Pollutrack

E&Y

Eaton

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Immersion4: At a glance, the Why

The Company

The Issues we address

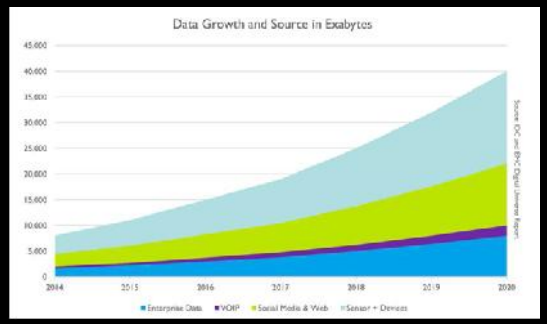
Our Solutions

Outcomes

Voice of customers

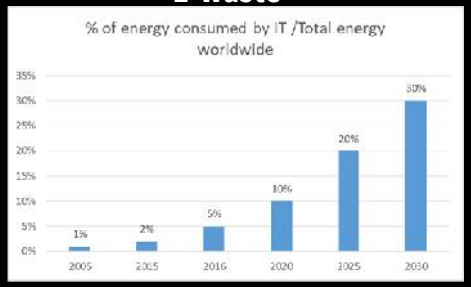
Labels

Today Data is Energy, emitting GHG & CO_2 using water



The more we produce & use data, the more we need powerful processors, networks and storage and hence generate more heat

Air- and Water-cooled Data Centers technologies of today generate exponential E-waste



In 2025, Data Centers will consume 20% of the world energy (from 3% in 2016), will emit 10% of the GHG including CO_2 and more than 1 trillion liters of water

Data Centers Total Cost of Ownership (TCO) & Return on Investment (ROI)

Today, Data Center technology, factories of the Digital age, are driving us to an unsustainable energy consumption model

Only 30% of the energy used in today's datacenters is dedicated to power IT

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DTM ICE Coolant

- **Immersion4 Intellectual Property**
- **100% Synthetic**
- **Guarantee 25 years at 60°C**
- **Flash Point at 160°C**
- **Ignition Point at 325°C**
- **Fiber Optic signal transmission 100 GB**

Full Immersion Cooling DTM Systems Offering

SERIES	SIZE	POWER KVA	KW/U/MAX
AIO	10U	10	1
AIO	15U	20	1,33
AIO	25U	40	1,6
AIO	50U	70	1,4



SERIES	SIZE	POWER KVA	KW/U/MAX
DC	10U	20	2
DC	15U	30	2
DC	25U	100	4
DC	50U	230	6

Modular Scale Up Model and Central Management Platform

- **DTM - Dynamic Thermal Management**
- **AIO series – « All in One » Version including Data, Management and Cooling source**
- **DC series – unlimited scalability for Datacenters**
- **Adaptive maintenance**
- **Designed for existing or new datacenters**
- **No infrastructure needed**
  - **No high ceiling**
  - **No raise floor**
  - **No AC**
  - **No CRAC / CRAH / Chiller**
  - **No chemical fire suppressor**
  - **No cold aisles**

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Immersion4: Savings at each steps from the upfront sizing to the decommissioning

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DTM ICE Coolant

- **Bio-degradable at 98%**
- **1500X more efficient than Air for collecting calories**
- **100% recyclable**
- **Low viscosity hence better circulation**
- **Wide temperature range**
- **No corrosion, no oxydation**
- **No evaporation**
- **25 years stability guarantee***



Clean & Lean Technology

- **No CO_2 emission**
- **No Greenhouse Gas emission**
- **No water consumed**
- **No Up front sizing**
- **No decommissioning**
- **No Delta "T" sensitivity**
- **Zero downtime**
- **Built 99.99% on recycled materials**
- **No moisture, no humidity,**
- **No dust, no noise**
- **No heat signature**
- **No electromagnetic radiation**
- **Climate agnostic**
- **EMP Harden**



Costs

SAVE UP TO:

- **80% on Real Estate CAPEX**
- **85% on Datacenter infrastructure CAPEX**
- **Up to 98% on Power Cooling OPEX**
- **30% on Power IT Load OPEX**
- **Installation in few days**
- **Less Maintenance**
- **A true "pay as you grow" solution**



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Immersion4: Powering the IT Load not to cool off the datacenter

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Up to 80% electricity consumption to cool off the Datacenter

Air / Water cooling datacenter challenges

Building infrastructure

Upfront sizing

- Dissipated Heat reuse – very low
- Chiller
- CRAC/CRAH
- Raised floors/special floors
- Chemical fire suppression
- Cooling sources (cooling towers, geo-thermic, ..)
- UPS system
- Backup generator
- Rack rails
- Air quality filters and control
- Dc power & water distribution schemes
- PPA & PPD energy sources
- **AIR and or Water required the data room for cooling**
- **Electrical hazards**

Only Racks

- Overclocking and Kw heat dissipation limitation per U & per Rack
- Hot aisles / cold aisles
- Hot spots
- Overheating after few mins depending on the load
- Temperature swings
- Dust
- Corrosion
- humidity
- Server fan failures
- Noise
- Air-side, water-side economizers
- Electromagnetic wavelengths
- EMP - Electro Magnetic Pulse sensitive

Up to 80% electricity consumption to power the IT Load

ONLY with Immersion4 DTM™ datacenter

Up to 70% savings

NO

- ✓ Yes up to 95% dissipated heat is reusable
- ✓ No
- ✓ No
- ✓ No
- ✓ No
- ✓ Half size or less
- ✓ Half size of less
- ✓ Half size or less
- ✓ No
- ✓ No
- ✓ No
- ✓ Half size or less up to "Off the grid"
- ✓ **No**
- ✓ **No**

DTM™ RACK , Tanks, CUBE, custom design , Mix

- ✓ No
- ✓ No
- ✓ No
- ✓ After few hours up to day depending on the load
- ✓ No
- ✓ No
- ✓ No
- ✓ No
- ✓ No need for fans
- ✓ No
- ✓ No
- ✓ No (Optional)
- ✓ Reduced to none (Optional)

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Immersion4: Green Building as Datacenter

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FOOTPRINT REDUCTION – SIMPLIFICATION – EASY INTEGRATION IN ANY ENVIRONNEMENT – VERY FAST DEPLOYMENT

Air & Water

1 to 35Kw / Rack

No dissipated Heat reused

CO2 reduction



Parameter of comparison: 2MW DC with 400 racks (5kW per rack) on two floors at 500m² white space, N+1 supply in mechanical system and electrical engineering, full UPS and secured. Maximum air intake temperature 27°C / 80 °F





Only ICE Coolant

Up to 230Kw / Tank From 1Kw / U

Up to 95% dissipated heat reused

CO2 FREE

DTM™ Tank Cluster –
- ✓ **5.06MW** with 24 Tanks
- ✓ **1 floor datacenter - 270m²** - 2700 sq/feet
- ✓ Half UPS & Backup system
- ✓ Cooling sources agnostic – No AIR handling needed
- ✓ **No Delta "T" sensitivity**

Heat dissipation per rack is NOT the reference point anymore. Immersion4 DTM™ data center are only POWER CAPACITY driven.

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Immersion4: At a glance: Use 80% of the energy to power your IT, not cool your building

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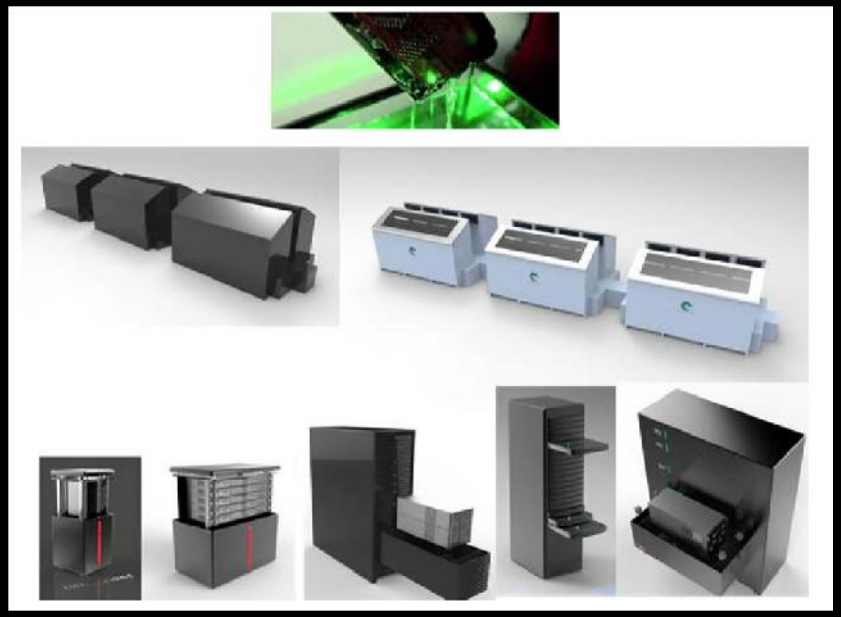
Voice of customers

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TODAY's DATA CENTERS



TOMORROW
IMMERSION4 DATA CENTERS



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French Railways – SNCF
June, 2019



Bruno Landes is in charge of Digitizing the comprehensive Rail Infrastructure of the company, Which represent Petabytes of Data and high performance Computing.

He decided to use Immersion4 Technology for this project in order to Reduce their carbon footprint and Energy costs

HP Enterprise World
February, 2019



Antonio Neri, CEO of HP with Serge Conesa, Immersion4 at World Mobile Congress Barcelona 2019 on HP Booth

City of Las Vegas
June, 2019



Michele Fiore is the Mayor Pro Tem/Councilwoman of the City of Las Vegas

She explains why she engaged with Immersion4 to save cost, energy, get the city more sustainable and increase citizens' data security

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International Telecom Union (ITU) World Annual Summit (September 2019) Immersion4 has been awarded with:

Award Winner of Global SME Excellence 2019

Award Winner of Most Innovative Use of ICTs 2019

www.itu.int/en/mediacentre/Pages/2019-PR15.aspx



SDG – Immersion4 Ecosystem answer positively the United Nation (UN) 17 SDG goals



International CLEANTECH week 2018 – Award of the preferred startup by the public



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Immersion4: At a glance – Highest recognition form the Telecom industry

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Serge Conesa, Founder of Immersion4, receiving from ITU Chairman

ITU Award of Global SME Excellence 2019

ITU Award of Most Innovative Use of ICTs 2019







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IMMERSION4

The Natural Path - « Making the cloud cool again »

Immersion4: At a glance – “4” Pillar & principles

THE « 4 » PILLARS

1. No CO2 emission
2. No GHG emission
3. No water consumption
4. Ethical

THE « 4 » PRINCIPLES

1. Eco-conservation
The best energy savings is the energy we don’t use from the server to the building.

2. Environmental conservation
To preserve & enhance the “Quality of Life” QoL.

3. Circular economy
“Pay as you Grow”. No up-front sizing. The best datacenter is the one with no datacenter infrastructure required.

4. Ecologically sustainable
99,99% built on recyclable materials.

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Data Centers Market

- It is a common understanding that **DATA can be considered as the 8th world "natural" resource** and becoming the "**new oil**". The Founder of Sofbank Vision Fund Masayoshi Son use to say "*Whoever controls data controls the world*"
- Only taking into consideration the IoT growth trend according to Gartner, we will go from 8.4 billion connected "things" in 2018 to **20.4 billion at the 2021 horizon** (Cf. https://www.gartner.com/newsroom/id/3598917)
- The **global data centers market** is estimated to reach revenues of around **$174 billion by 2023**
- The increasing focus in the adoption of advanced technologies such as **cloud-based services and IoT** will increase the **growth of the global data center market**
- The construction of hyperscale facilities spanning with an area of over 200,000 square feet across the globe will create lucrative opportunities for leading vendors operating in the global market
- Companies such as **Facebook, Google, Amazon Web Services (AWS), and Microsoft** are among the largest companies focusing on the development of modular and hyperscale data center construction facilities
- Operators globally are **seeking technology solutions to bring data centers CAPEX & OPEX down** as they must be cooled with AC 24/7 with ASHRAE 22 °C as the maximum the data room should ever reach!
- The datacenters market is divided in 2 market segments :
    - Civilian - Public / Hybrid / private clouds own by private companies &
    - Governement – Administration / governement / INTEL / Defense own by both public and private stakeholders (government, military, intelligence)

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At your disposal

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