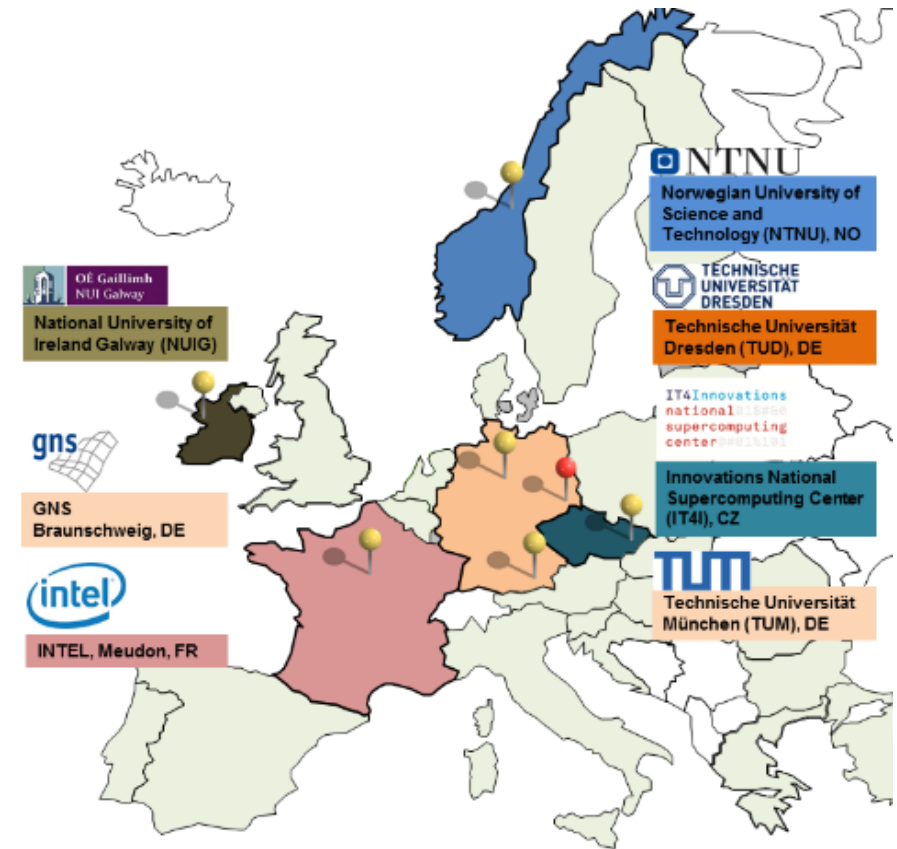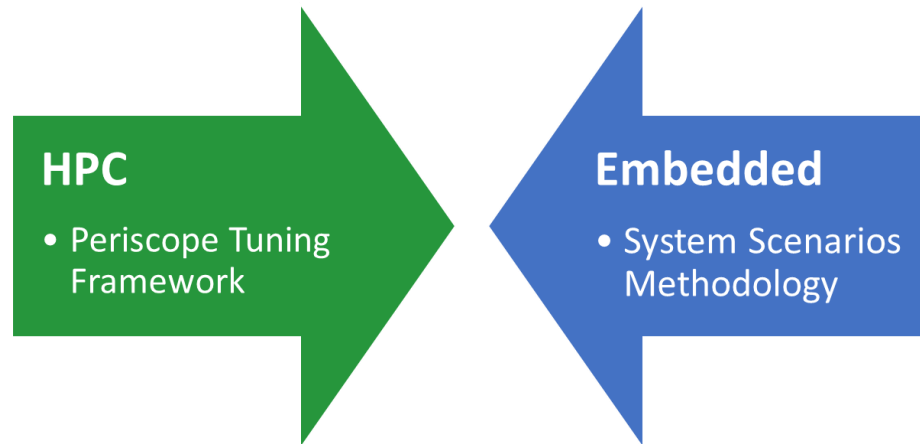# READEX

Runtime Exploitation of Application Dynamism for Energy-efficient eXascale computing

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READEX – Objectives

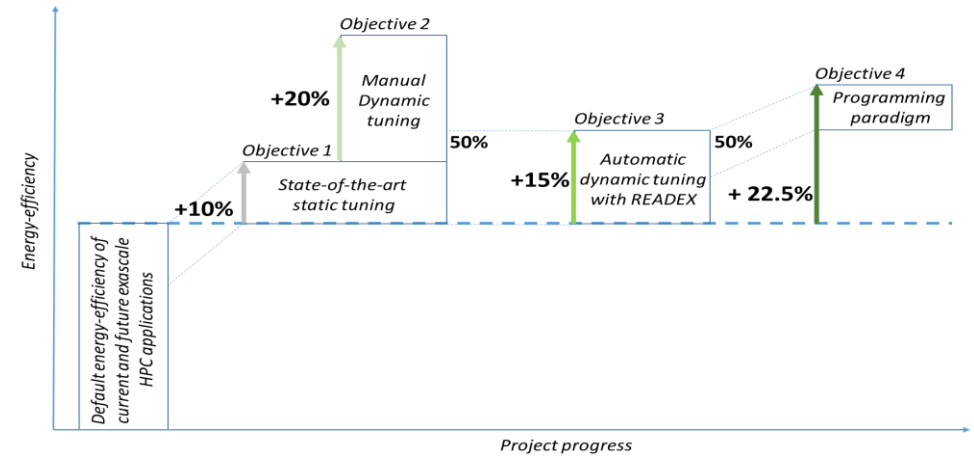**Goal: Improve energy-efficiency of parallel applications by exploiting runtime dynamic behavior**

Integrated tool-suite for analysis and tuning

Combine technologies from HPC and Embedded Systems

HPC
- Periscope Tuning Framework

Embedded
- System Scenarios Methodology

OÉ Gaillimh NUI Galway
National University of Ireland Galway (NUIG)

gns
GNS Braunschweig, DE

intel
INTEL, Meudon, FR

NTNU
Norwegian University of Science and Technology (NTNU), NO

TECHNISCHE UNIVERSITÄT DRESDEN
Technische Universität Dresden (TUD), DE

IT4Innovations national supercomputing center
Innovations National Supercomputing Center (IT4I), CZ

TUM
Technische Universität München (TUM), DE

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Co-design approach

- Manual analysis and tuning efforts
- Automatic tuning using READEX tool-suite
- Comparison of effort and improvement in energy efficiency

Applications

- PERMON and ESPRESO
- INDEED
- CORAL Benchmarks
- European benchmarks

READEX
Runtime Exploitation of Application Dynamism
for Energy-efficient eXascale computing

exdci
European Extreme Data & Computing initiative

European Commission | Horizon 2020 European Union funding for Research & Innovation