IS-ENES Carbon Footprint group
Who are we, what do we want to achieve?

- Voluntary group that naturally emerged after Casimir's talk on IPSL carbon footprint at IS-ENES3 KO; 23 persons on the slack channel now!
- Bottom-up approach, not a task described in IS-ENES3 DoW
- First telco on September 10th 2019, 5 target actions identified

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Action 1 - Identify a carbon footprint representative for each IS-ENES3 partner (S. Valcke)

- BSC: Mario Acosta
- CNRS-IPSL: Eric Guilyardi, Balaji
- DKRZ: Maria Moreno, Martina Stockhause
- CERFACS: Sophie Valcke
- CMCC: Italo Epicoco

- STFC: Martin Juckes
- SMHI: Helena Martins, Uwe Fladrich
- NLeSC: Jaro Camphuijsen
- UNIMAN: Mike Ashworth
- IS-ENES3 (project manager): Sophie Morellon

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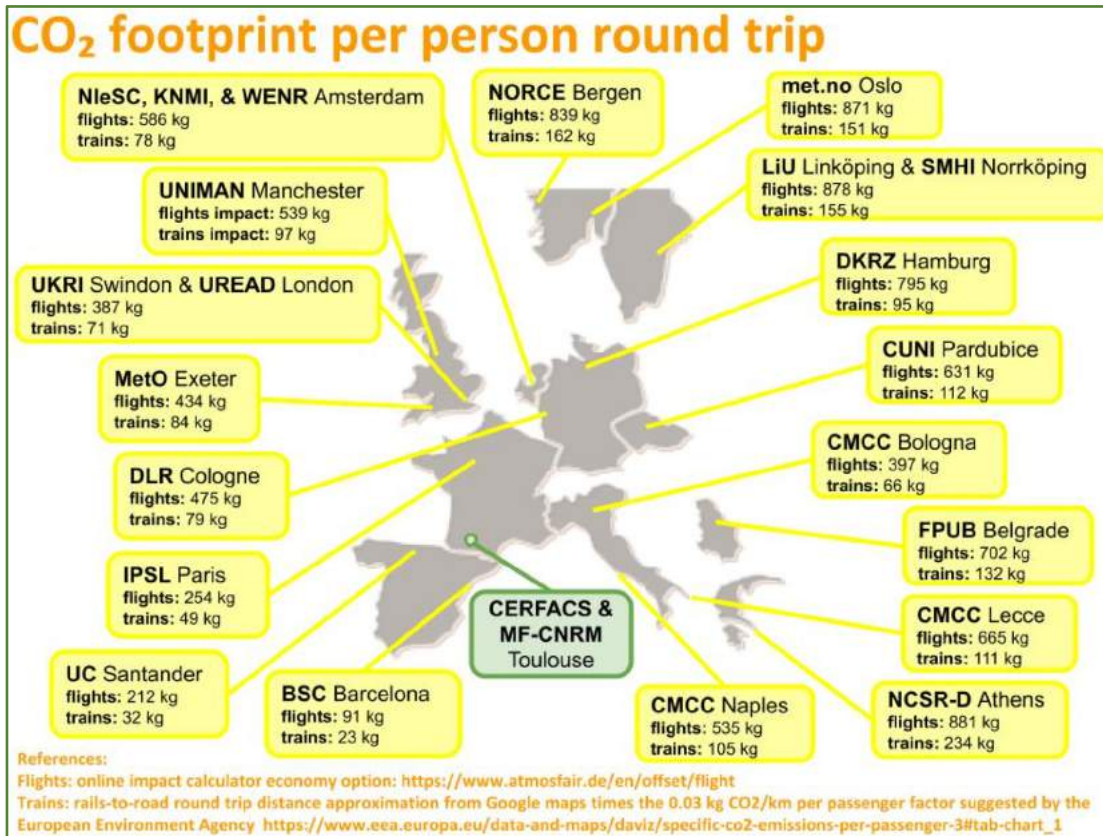- IS-ENES3 (project manager): Sophie Morellon

Partners with no official representative :
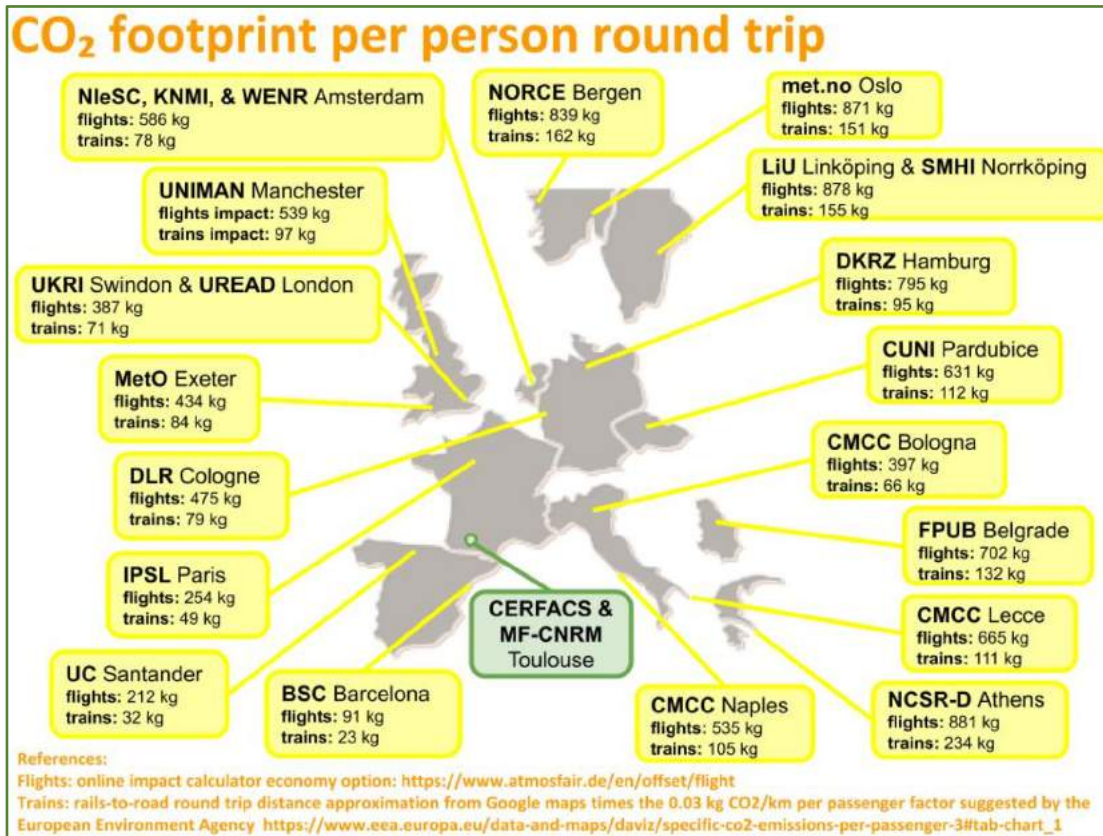UREAD-NCAS, MetO, BSC, KNMI, DLR, UC, met.no, MF-CNRM, NCSR-D, WENR

Action 2 - Encourage people to come by train and not by plane to the IS-ENES GA (M.Moreno)

CO₂ footprint per person round trip

NleSC, KNMI, & WENR Amsterdam
flights: 586 kg
trains: 78 kg

NORCE Bergen
flights: 839 kg
trains: 162 kg

met.no Oslo
flights: 871 kg
trains: 151 kg

UNIMAN Manchester
flights impact: 539 kg
trains impact: 97 kg

LiU Linköping & SMHI Norrköping
flights: 878 kg
trains: 155 kg

UKRI Swindon & UREAD London
flights: 387 kg
trains: 71 kg

DKRZ Hamburg
flights: 795 kg
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MetO Exeter
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References:
Flights: online impact calculator economy option: https://www.atmosfair.de/en/offset/flight
Trains: rails-to-road round trip distance approximation from Google maps times the 0.03 kg CO2/km per passenger factor suggested by the European Environment Agency https://www.eea.europa.eu/data-and-maps/daviz/specific-co2-emissions-per-passenger-3#tab-chart_1

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Also planned: questionnaire to evaluate IS-ENES3 carbon footprint

Finally: very-low carbon GA, thanks COVID-19

More seriously: a good opportunity to evaluate the possibility of organizing more virtual meetings !

Action 3 - Write a short document on best practices to be distributed to all IS-ENES3 partners regarding all project aspects, e.g. travelling, organising workshops, etc. (H. Martins)

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Identification of three documents to support Action 3:

- European Commission Guide for Sustainable meetings and events
https://slack-files.com/TG73PA95K-FNKBR9QQM-c0803ff9f6

- IS-ENES3 Communication and Dissemination
https://slack-files.com/TG73PA95K-FN7T631FV-4b37daa4f0

- AQUACLEW (SMHI 2018 project) Climate Friendly Research
https://slack-files.com/TG73PA95K-FNM7JPUGP-7703926957

Action 4 - Help the CPMIP effort (IS-ENES3 WP4) to obtain number regarding the energy consumption and carbon footprint linked to the CMIP6 simulations (M. Acosta)

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- CPMIP is a set of metrics to evaluate the computational efficiency of a Earth System Model execution, **including JPSY (the energy consumption per simulated year) given in Joules**.
- CPMIP for CMIP6 is being collected here by several institutions:

  https://docs.google.com/spreadsheets/d/1rNSGb4uZHMlx4jnrlBMtIQ6mGWX WDUTeE-9ntjn4FxE/edit#gid=242464663

- It is a collaborative effort, it would just take one hour of your time, at most
- A final collection will be done end of 2020, but everyone can participate now

Action 5 - Write a more comprehensive document on what and how to measure the carbon footprint of a research lab or institution (M. Moreno)

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- Primary contribution: computer simulations carbon footprint

energy
consumption   **X**   conversion
factor

↑   ↑

- in kWh   - in CO2 kg/kWh
- collected   - from supplier bill
in Action 4   or country mix
                     - collected in Action 4

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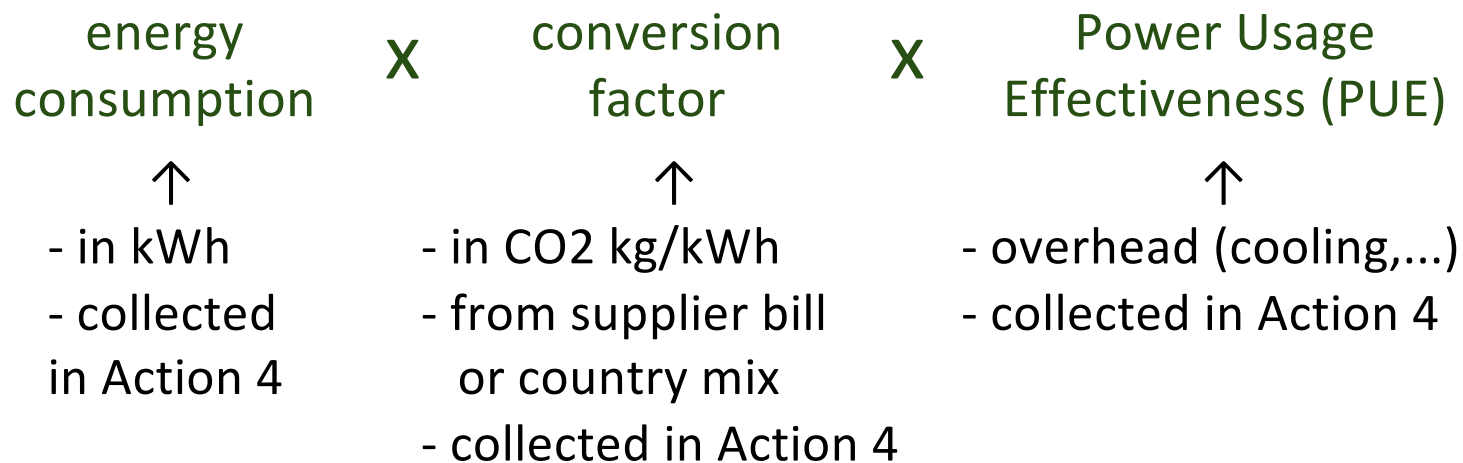- Primary contribution: computer simulations carbon footprint

energy consumption	X	conversion factor	X	Power Usage Effectiveness (PUE)
↑		↑		↑
- in kWh - collected in Action 4		- in CO2 kg/kWh - from supplier bill or country mix - collected in Action 4		- overhead (cooling,...) - collected in Action 4

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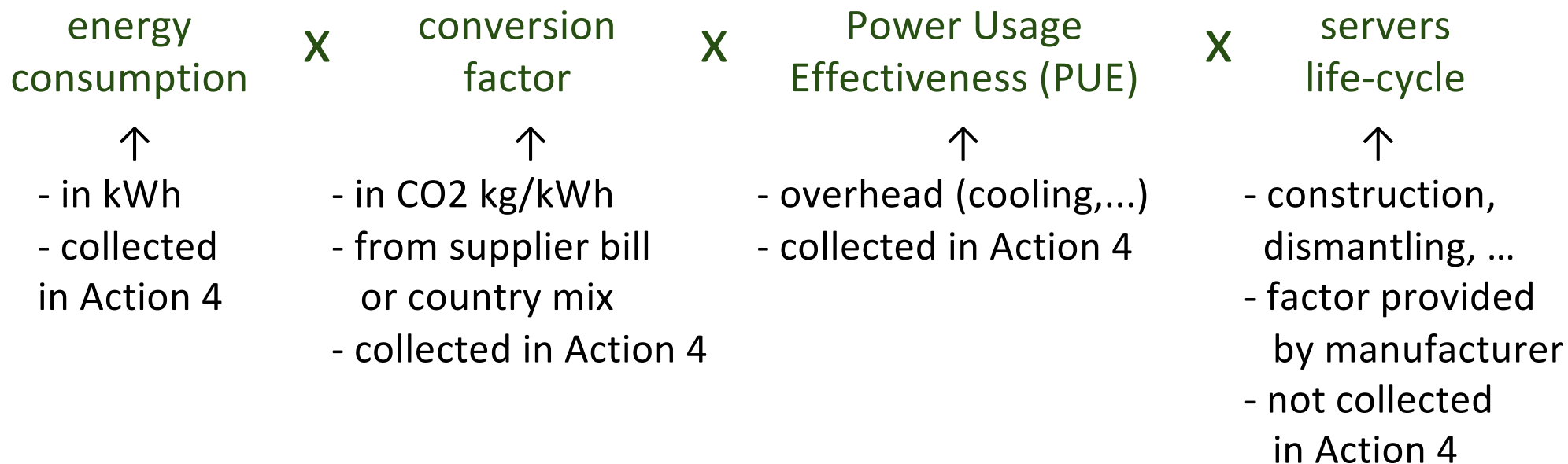
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energy consumption	X	conversion factor	X	Power Usage Effectiveness (PUE)	X	servers life-cycle
↑		↑		↑		↑
- in kWh - collected in Action 4		- in CO_2 kg/kWh - from supplier bill or country mix - collected in Action 4		- overhead (cooling,...) - collected in Action 4		- construction, dismantling, … - factor provided by manufacturer - not collected in Action 4

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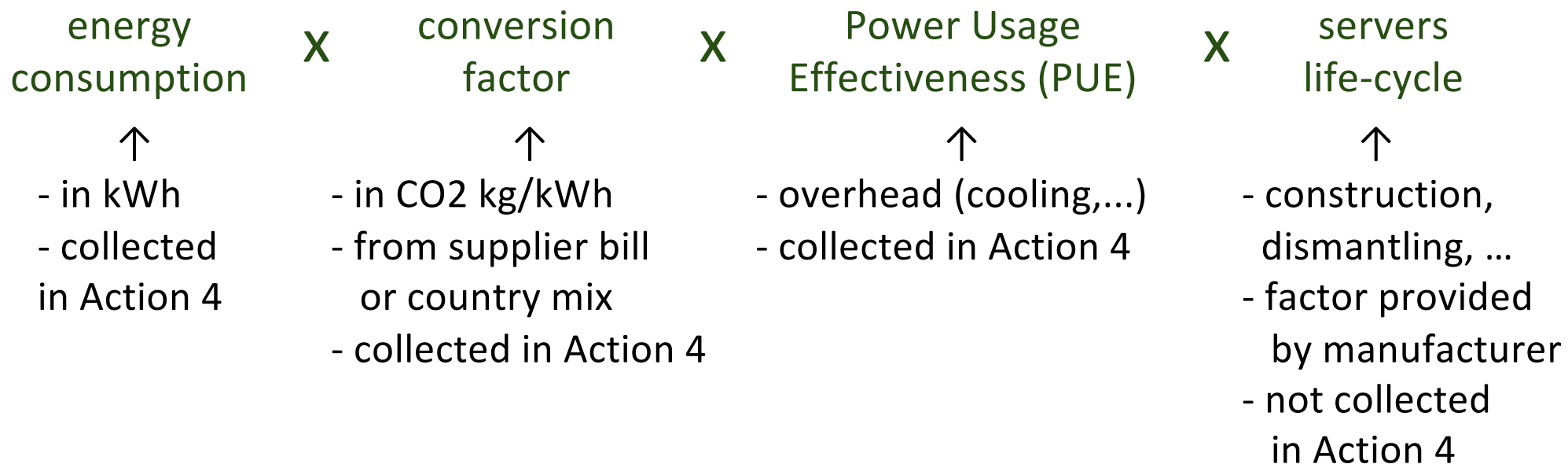
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- Secondary contribution: travelling, building energy consumption,...

Want to take part? Join us !!!!

Carbon footprint virtual meeting Friday 14h30

https://cerfacs.webex.com/cerfacs-en/j.php?MTID=m3849c81efb03a6d44169ec4f25e6cc64

is-enes
INFRASTRUCTURE FOR THE EUROPEAN NETWORK
FOR EARTH SYSTEM MODELLING

THE CONSORTIUM

Coordinated by **CNRS-IPSL**, the IS-ENES3 project gathers **22 partners** in **11 countries**

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National Centre for Atmospheric Science
NATURAL ENVIRONMENT RESEARCH COUNCIL

Met Office

DKRZ
DEUTSCHES KLIMARECHENZENTRUM

BSC CERFACS

CMCC
Centro Euro-Mediterraneo sui Cambiamenti Climatici

Koninklijk Nederlands Meteorologisch Instituut
Ministerie van Infrastructuur en Waterstaat

SMHI UK Research and Innovation

UC UNIVERSIDAD DE CANTABRIA

DLR

netherlands eScience

Norwegian Meteorological Institute

METEO FRANCE
Toujours un temps d'avance

MANCHESTER 1824
The University of Manchester

WAGENINGEN UNIVERSITY & RESEARCH

CHARLES UNIVERSITY

NORCE

LIU LINKÖPING UNIVERSITY

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is-enes@ipsl.fr

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