

# **RWP-2021**

Claude Fischer, ALH Assembly, 27 November 2020

# A trial roadmap derived from the Strategy

- **Mid-term specific objectives (~2023):**

- Progress in working methods & environment (new code versions)
- Concrete involvement of Consortium Project staff into code refactoring for adapting to new HPC architectures (link with ECMWF/Scalability)
- Data Assimilation: OOPS ready for transition to operations at some Member institutes (and assess timing at ECMWF)
- DAs-KIT progress (capacity building)
- SURFEX in all CSCs based on a common version
- Analysis of interoperability for physics packages and ability to derive a work plan from it

- **... while not sacrificing steady progress in the long term goals described in the Strategy**

- **... and ensuring no breach of interoperability across CSCs nor significant break-out in the scientific choices**

# What do we want to reach by 2025 ?

- A significant convergence in working methods and environment (and scripts?)
- A code with a certain level of readiness for new HPC architectures
- New options for the dynamical core
- A modernized upper-air DA solution (EnVar)
- Increased use of observations for all CSCs, based on some common standards (pre-processing)
- An improved surface representation (SURFEX) and the realization of steps for a modernization of the surface assimilation
- Improved physics (reduced specific biases) in any CSC; solutions for the hectometric scales (3D, aerosol/cloud/radiation, model output diagnostics etc.)
- Ensemble prediction systems at state-of-the-art
- Increased capacities in Meteorological Quality Assurance

# Headlines of the RWP-2021: science & technology

- Same general structure as previous RWPs, however significantly adapted content to the outcome of the Strategy 2021-2025
- Adapting the codes to new HPC architectures: SPTR1
- New options for/in dynamical core (while improving the existing one): DYN1-2-3
- **Upper-air DA:**
  - DA methods and observations (existing and new types – DA[1-5])
  - OOPS (DA6), obs pre-processing (DA7), DaskIT (DA8)
- **Surface:**
  - Assimilation methods and use of observations (SU1-2)
  - SURFEX and study impact of new options in NWP (SU-4); surface characterization (SU5)
  - more visibility about ocean-atm coupling activity (SU6)

# Headlines of the RWP-2021: science & technology

- **Physics:**

- CSC physics, MUSC (PH4), model output diagnostics (PH5)
- *new: cloud/radiation/aerosol (PH6), 3D effects (PH7), ML (PH8), increase interoperability across physics (PH9), truly stochastic physics (PH10)*

- **EPS:**

- system-dependent WP, calibration (E6), *user-oriented approaches (new E7)*

- **MQA: extended the content of MQA3 (general verification of model performances and alleviation of model weaknesses)**

- **Towards sub-km modeling (HR1)**

# Management & common activities

- New MNGT4
- Updated COM2.1 (cycles), COM3.1 (collaboration on porting the codes to Members), COM3.3 (training)
- New COM2.2: design for modernized working environment
- *System: new SY4 (exploration of solutions and tools for converging to a more common working env.)*
- New COM3.4: ASW & EWGLAM meetings

# Timing of RWP

- **Building the RWP-2021:**

- End of editing with PM's, Support Team, HMG-CSSI and other redactors: 16 September
- Commitments by LTMs & HoRs: 17/09 – 1/10
- Inclusion of commitments by RWP redactors: 5-9/10; followed by final update by Support Team + PM's + CSSI chair on 12-15/10
- RWP tasks largely done in parallel to the tasks required for the final steps of the convergence process

- **Approval of RWP-2021 by Assembly: on the agenda of 27 November 2020**

- **How to implement the RWP-2021 into a Detailed Action Plan:**

- Start asap with the support of CSC-L and LTMs (and WP redactors) in order to build a first proposal
- Confirm this DAP with the other MG members once designated (asa March or April)

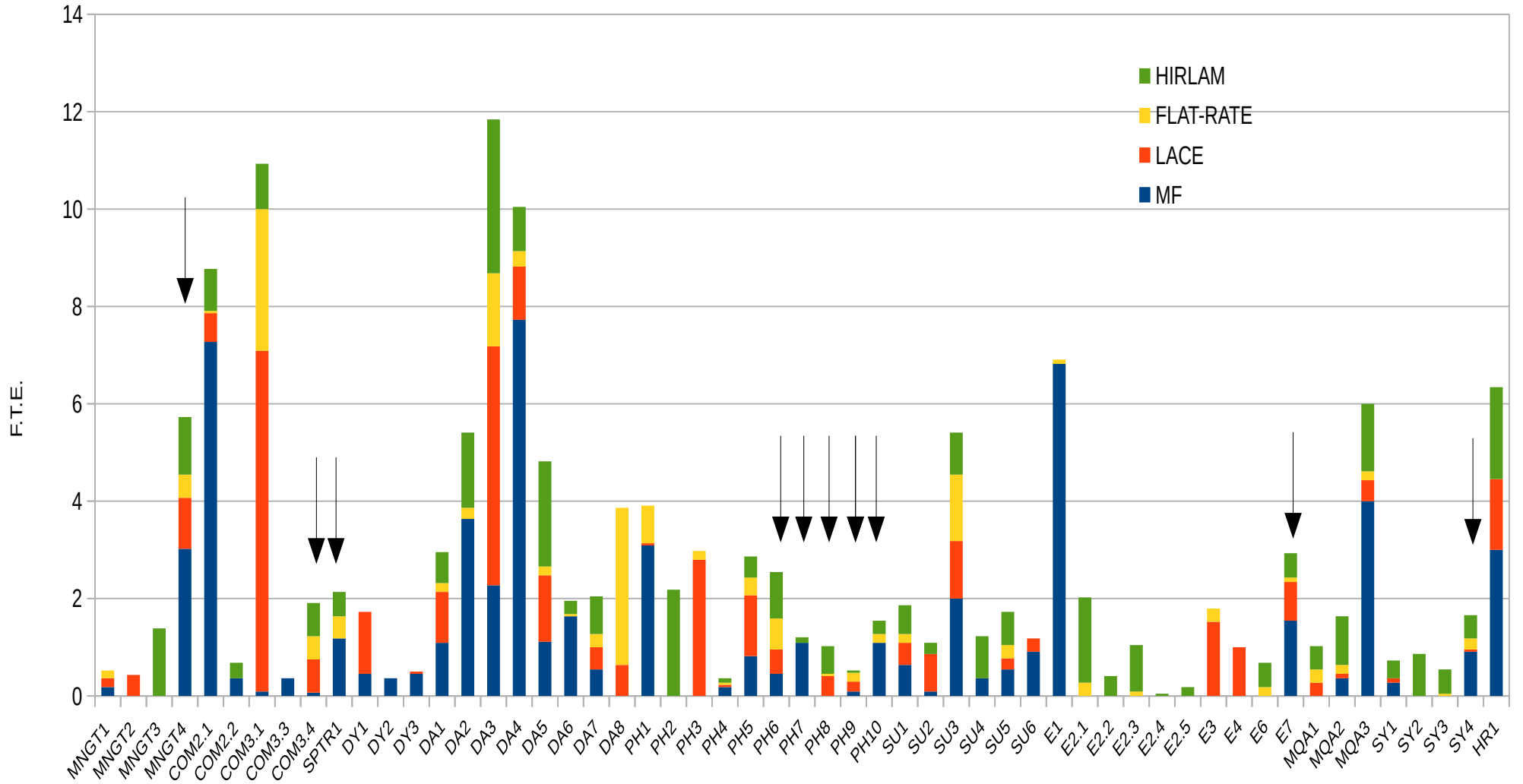
- **We expect to have the full MG play a significant role in preparing the RWP-2022**

# Manpower figures ...



# Commitments in RWP 2021

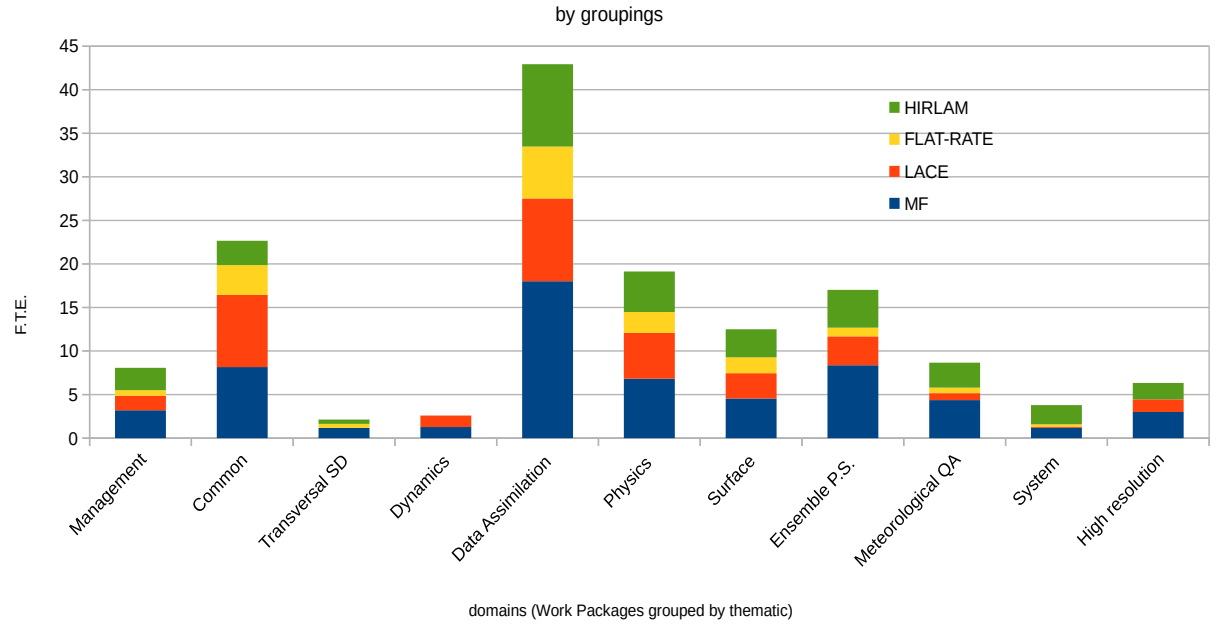
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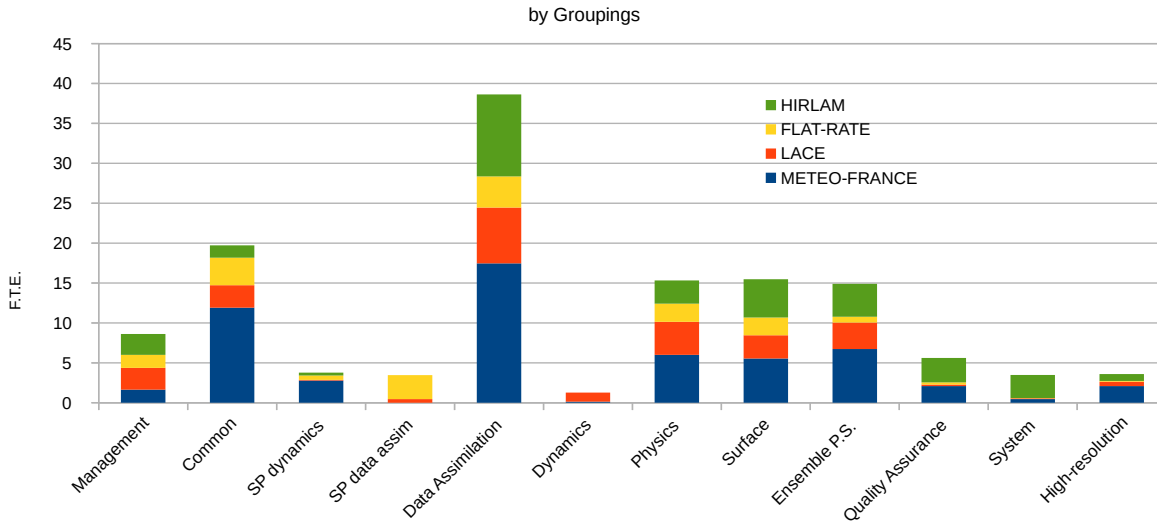
## Manpower figures ...

- **Additional note: according to the content of the RWP-2021, monitoring of the manpower registered for “code engineering, phasing and quality assurance” (ref. Item 59 of MoU) will be based on the 2021 register about COM2.1, COM3.1, SY2 and MQA3**

### Commitments in RWP2021



### Commitments in the Rolling Work Plan 2020



# Thank you

Questions & comments ?

Decision needed for the Assembly: approval of the RWP-2021 document