# EPN DENSIFICATION STATUS AND ACTIONS

**EPN WG**

A KENYERES – Z ALTAMIMI - C BRUYNINX - A CAPORALI – M LIDBERG - G STANGL

**DATA PROVIDERS**

**A BARON** – F DE DONCKER – B DROSCAK – P FRANKE – B GARAYT – I GEORGIEV –
D HANSEN – T HORVÁTH – L HUISMAN - I JUMARE – **O KHODA** – J NAGL –
**X PAPANIKOLAU** – P PIHLAK – M RYCZYWOLSKI – M VALDES – **I ZURUTUZA**

# EPN DENSIFICATION

## TARGET

COMBINATION OF NATIONAL WEEKLY SINEX SOLUTIONS TO REALIZE HOMOGENEOUS, DENSE EUROPEAN ***LEVEL POSITION AND VELOCITY*** DATABASE, CONSIDERED AS DENSIFICATION OF THE ITRF AND ETRS89

## MAIN FACTS

- DISTRIBUTED ANALYSIS, NO CENTRALIZED PROCESSING IS NEEDED
- CLEANED AND HOMOGENIZED (station naming) SINEX BACK TO DATA PROVIDERS,
- INDEPENDENT TEST OF THE NATIONAL NATIONAL ETRS89 REALIZATION,
- **COMBINED SOLUTION FREED FROM OCCASIONAL REFERENCE FRAME DEFINITION WEAKNESSES,**
- **GEODESY**: POSSIBLE EXTENSION OF ETRS89 OVER THE NON-STABLE PART OF EUROPE (VELOCITY MODEL),
- **GEOPHYSICS**: CONTRIBUTION TO LARGE SCALE TECTONIC INTERPRETATION

# DATA AVAILABILITY – SEPTEMBER 2015

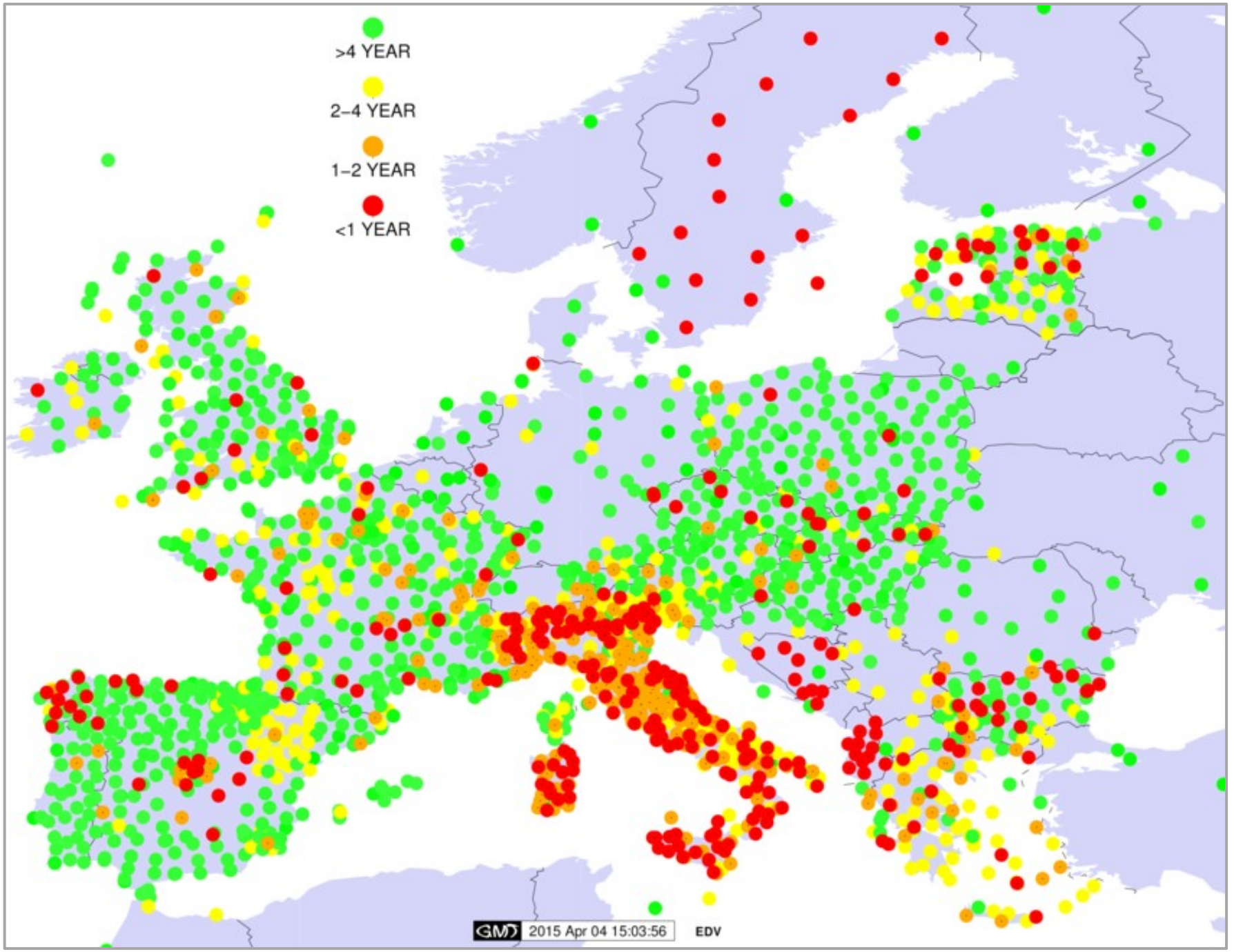
| | | | |
|---|---|---|---|
| ASG | Poland | : 1482 – >1800 | **re-processed** |
| EST | Estonia | : 1448 – >1858 | routinely |
| GGI | Latvia | : 1461 – >1859 | quasi-routinely |
| GKU | Slovakia | : 1408 – 1846 | |
| CZE | Czech R | : 1565 – 1853 | ½ year batches |
| SGO | Hungary | : 1200 – >1859 | **re-processed** |

**ECC**

| | | | |
|---|---|---|---|
| BUL | Bulgaria | : 1434 – 1825 | daily GAMIT |
| **AMON** | **Austria** | **: 1356 – >1857** | |
| **MON** | **Middle East** | **: 1400 – >1857** | |
| **GRE** | **Greece** | **: 1721 – >1857** | |
| **CEGRN** | **CE-Europe** | **: 1400 – >1857** | |
| **UPA** | **Italy** | **: 1623 – 1778** | **under revision** |
| IGN Spain | Spain/Portugal | : 1400 – 1840 | DAILY, REPROCESSING STATUS? |
| CAT | Catalonia | : 1408 – 1859 | |
| AGRS | The Netherlands | : 0782 – >1826 | |
| NGI | Belgium | : 1787 – >1857 | |

# MAO (MAIN ASTRONOMIC OBSERVATORY) CONTRIBUTION

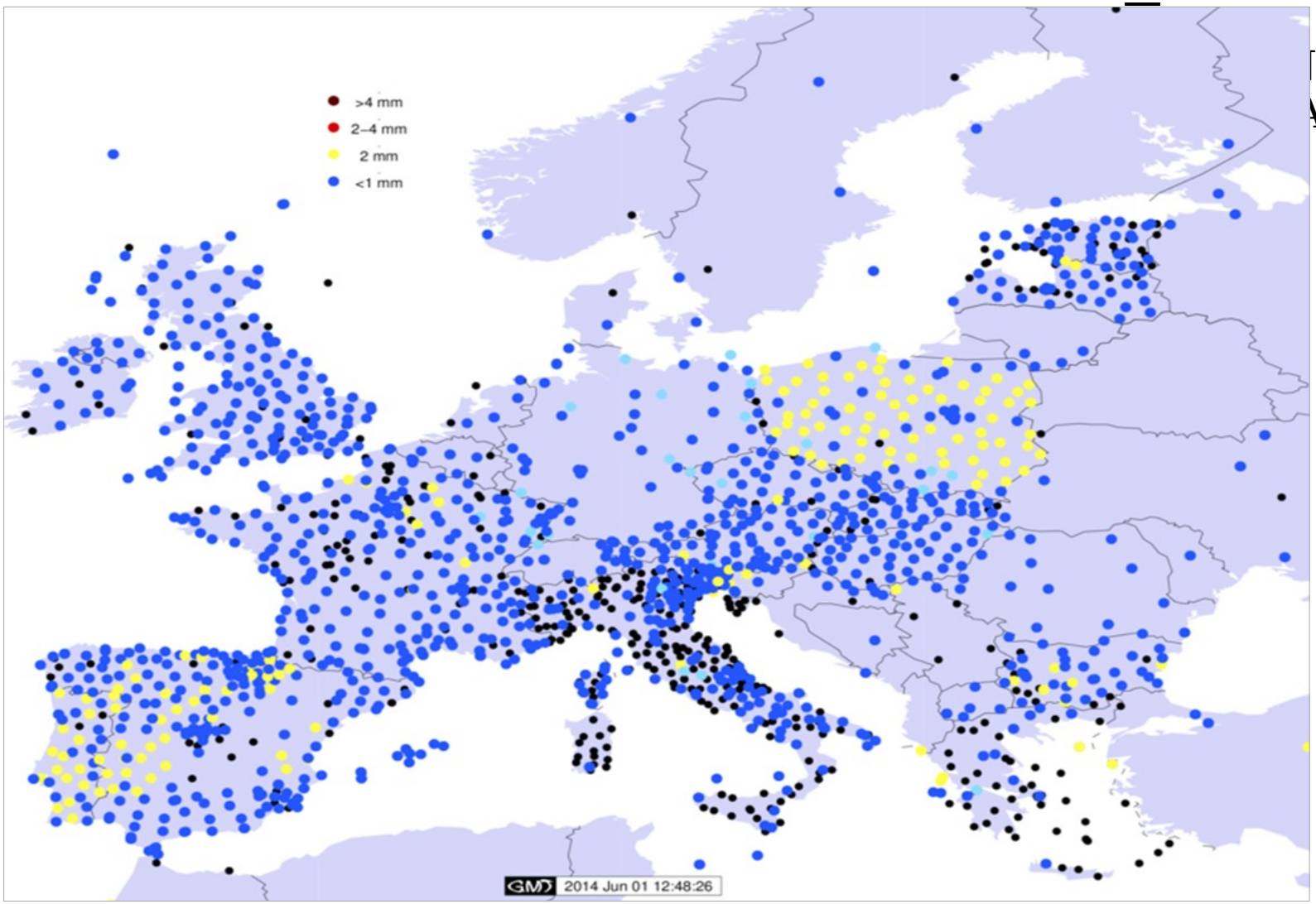
# SINEX AVAILABILITY



# SOME STATISTICS, AS OF TODAY

- 2648 ACTIVE STATIONS AND 4166 SOLUTIONS IN THE SOLUTION SINEX
- ~6800 WEEKLY SINEX FILES
- ~26 GB OF SINEX DATA
- DATA AVAILABILITY MOSTLY SINCE 2007 (AFTER WEEK 1400)
- ~2000 SINGLE OUTLIERS/SHORT OUTLIER PERIODS DELETED AND STORED IN A META-DATA BASE
- RUNTIME: ~18 HOURS IN A MULTI-CORE COMPILER ENVIRONMENT
- 1.6 GB cumulative SINEX
- [ 11200 x 11200 ] COV matrix

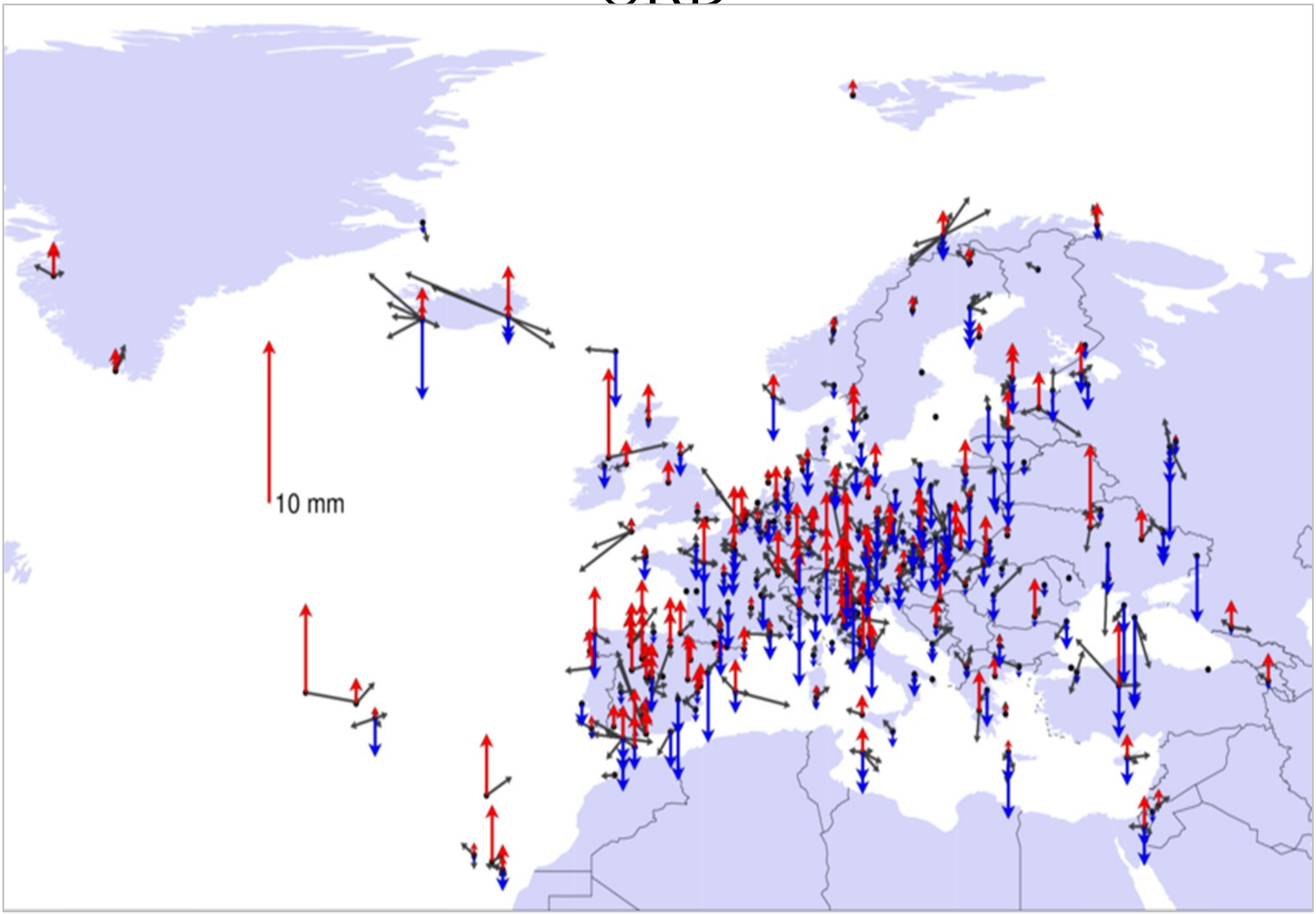
# DO WE NEED REPRO_2?



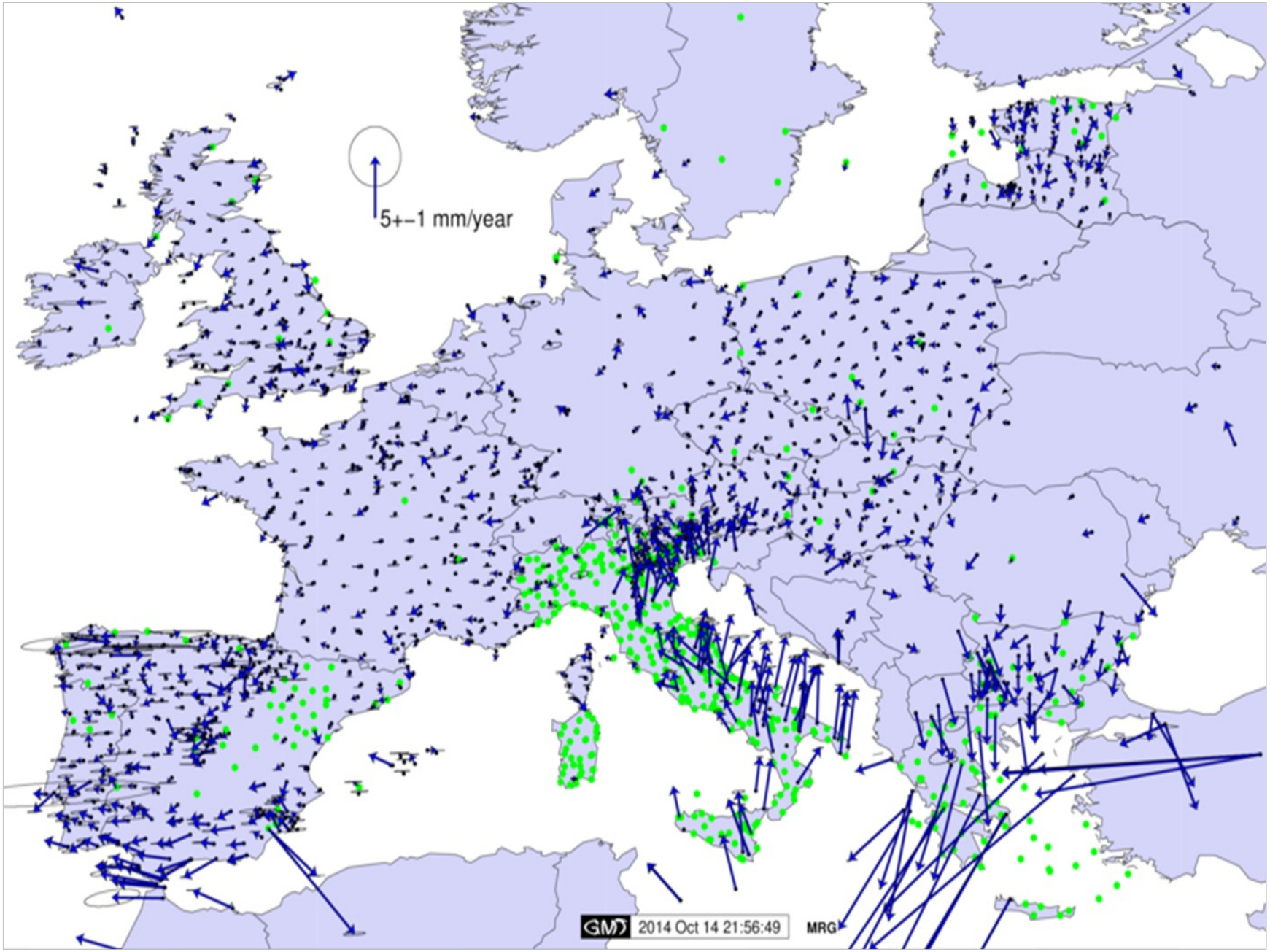

-COMPONENT OFFSE
AT WK1632

YES, BUT …
POLAND ALREADY REPROCESSED
SPAIN HAVE TO

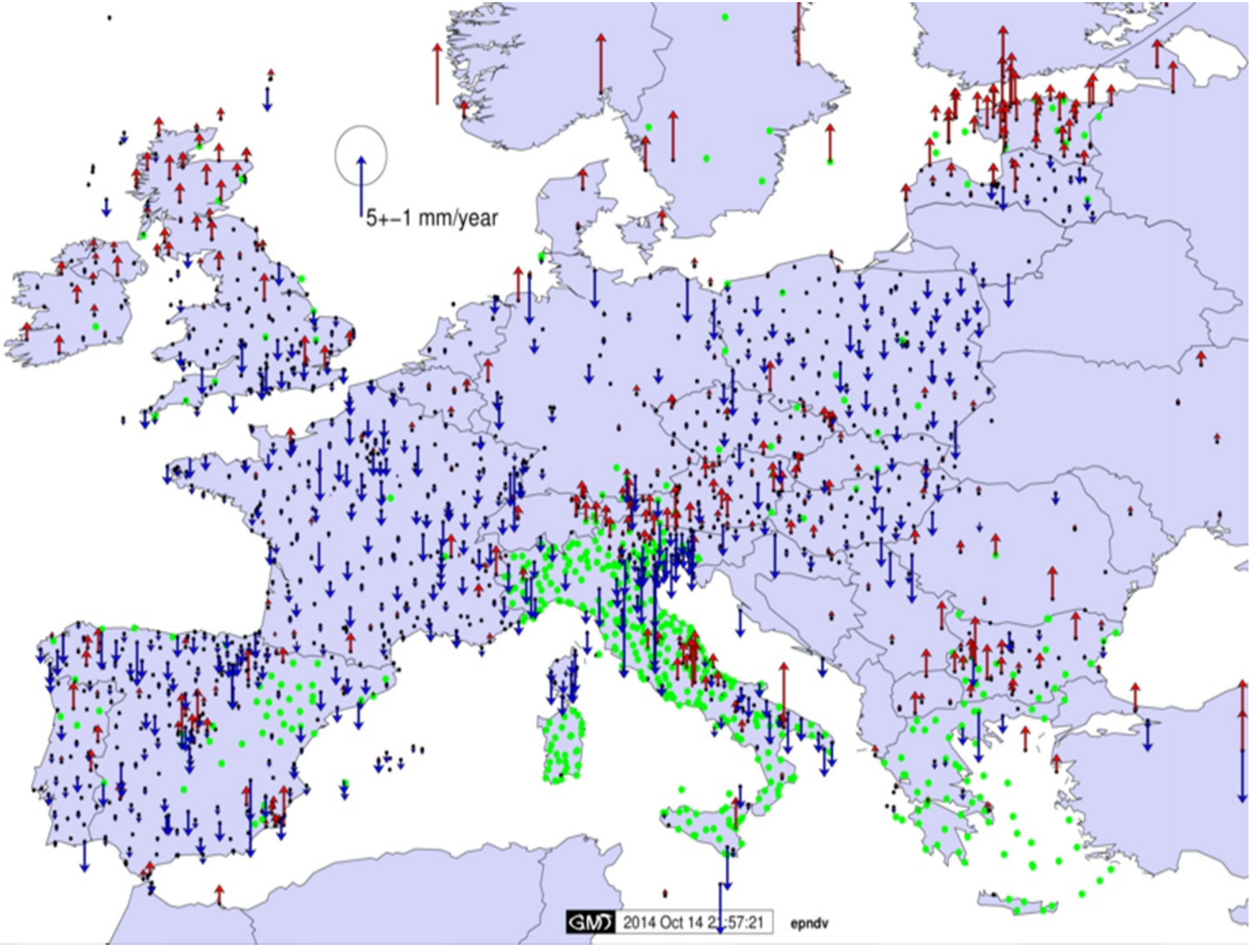
# COMPARISON WITH OFFICIAL EPN - CRD



# EPN DENSIFICATION – 2D VELOCITIES



# EPN DENSIFICATION – UP VELOCITIES



# PLANNED TASKS

PERMANENT METADATA COLLECTION (PRIMARILY LOG SHEETS)

- STATION IDENTIFIERS MANDATORY
- LOG SHEETS TO EPNCB HIGHLY RECOMMENDED

REPROCESSING

COMPATIBILITY ON IGS – EPN – NATIONAL LEVEL

REFERENCE FRAME DEFINITION

ITRF2014 – INVESTIGATION OF SEASONAL SIGNAL

PUBLICATION

WEB AND PAPER

COOPERATIONS TO DEEPEN

- EUPOS

EUPOS COMBINATION CENTER REEPRESENTS CE-EUROPEAN COUNTRIES

- EPOS
  - ADDITIONAL INPUT DATA EXPECTED
  - CONTRIBUTION TO EPOS PRODUCTS WITH