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| **World Meteorological Organization**  **Commission for Instruments and Methods of Observation**  **Strategic Planning Meeting**  Geneva, Switzerland, 27-29 June 2017 | **CIMO/Strat-Plan/Doc. 3.1(2)** |
| Submitted by: Bruce Hartley  20.07.2017 |

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# Proposal for a new CIMO Structure

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| **Summary and purpose of document**  This document provides information on proposed CIMO vision changes and proposed CIMO structure changes. |

**Action proposed**

The Meeting is invited to consider this input document, and incorporate

those parts that are considered valuable into a consolidated Input document

for the CIMO full commission meeting.

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# Considering: CIMO/Strat-Plan/Doc. 3.1(2)

## Section: VISION FOR THE SURFACE-BASED COMPONENTS OF WIGOS IN 2040

## Draft version 7.1, 12 October 2016

Pertinent excerpts from the above reference are included here with highlights showing key words and terms relevant to the proposed structure of CIMO:

* Capitalize on existing, new and emerging observing technologies
* New approaches in science, data handling and training
* Acquiring, processing and disseminating are undergoing very rapid change

## Response to user needs

* Reliable, stable, sustained and cost-effective manner
* Improved spatial and temporal resolutions and timeliness
* Observations of high quality and for improved levels of quality control
* Evolve in response to a rapidly changing user and technological environment

## Integration

* Observations to support the full range of WMO and co-sponsored Programmes
* Integration through analysis of requirements with WMO Members and other partners
* Cost-effective
* Surface & space systems will complement each other, for calibration & quality control
* Metadata will be collected, exchanged, recorded, standardized
* Quality monitoring will be implemented

## Expansion

* Observations to support the monitoring of Essential Climate Variables
* Sustainability
* Mature R&D systems implemented as operational systems
* New information will be made available through miniaturization of sensors, cloud technology, crowdsourcing, and the “Internet of Things”
* There will be enhanced interactions between observation providers and users, including **data assimilation centres**

## Automation and technology trends

* Observing systems using new observing technologies
* Real-time and raw data
* Observing test-beds will evaluate new systems to develop guidelines
* Observing will take advantage of telecommunication advances
* Efficient and interoperable technologies will be developed
* Traditional observing systems will be complemented by small inexpensive sensors that are mass-produced and measure a broader range of variables.

## Consistency, continuity and homogeneity

* Increased standardization of instruments and observing methods
  + *AUTHOR COMMENT - I DISAGREE - This is an on-going battle that will never be won i.e. it will be the opposite of this. Therefore CIMO needs to provide guidance* *to: manufacturers; equipment network operators; and users to aid decision making i.e. to enable purchasing of data that is fit-for-purpose and NOT purchasing specific equipment.*
* Growing reliance on reference networks to develop and establish standards serving as reference baselines;
* Improved calibration and metadata to ensure data consistency and traceability
* There will be improved quality control and characterization of errors
* There will be improvements to ensure continuity and robustness, including management of transitions
* Increased interoperability, between existing and newly implemented systems

## Data generation and delivery

* Open source and API accessible data will increasingly be used.
* Potential new application areas (themes) will require new measurement technologies and observing systems: road meteorology, urban meteorology, chemical weather, space weather, renewable energies, other.

# Proposed Changes to the New CIMO Mission

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| **Current** | **Future (draft) - Bruce Hartley 20 June 2017** |
| Promote (Mission):   * high quality observational data * world-wide compatibility | Mission:   * ~~Members achieve~~ Fit-for-purpose environmental measurements through ~~appropriate~~ timely leadership, standards and guidance ~~observing technologies~~. |
| by (Achievement):   * Defining technical standards * Testing and calibration * Performing instrument intercomparisons * Implementing quality control procedures * Increasing expertise and Capacity-building | To achieve this vision:   * Develop and promote ~~the implementation of good~~ standardised measurement ~~practices~~ themes * Develop and provide effective ~~access to standards and~~ guidance material * ~~Collaborate effectively with all~~ Promote quality methods with users and providers ~~of measurements~~ * ~~Coordinate~~ Stimulate the transition from new science and technology to ~~operational~~ implementation * Identify and characterize ~~the utility of~~ measurement~~s~~ from emerging ~~alternative~~ technologies |
| for (Vision):   * Improving quality of products and services   note ECV = Essential Climate Variables | The results / outcomes (vision):   * ~~We are~~ ~~used~~ CIMO is recognised as the authoritative source of information on ~~suitability of~~ hydro-meteorological measurement~~s for specific environmental intelligence (applications)~~ * Users and providers understand ~~the importance of~~ and implement quality mechanisms in their ~~the~~ measurement systems. ~~process in the environmental information chain~~. * ~~Users and providers are committed to traceability of ECV measurements.~~ * ~~The quality and utility of emerging measurements is documented in the CIMO Guide and reference material.~~ * New science and technologies are effectively implemented by users and providers. |

# Proposed New CIMO STRUCTURE

This proposed structure is built out of the Vision Results - "To achieve this vision:"

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| CIMO PresidentCIMO Vice President |
| OPAG A: Standardisation and Guidance  * Develop and promote standardised measurement themes * Develop and provide effective guidance material   + CIMO Guide   + Cloud Atlas   + ISO   + HMEI tender documents   + Capacity building |
| OPAG B: Quality Methods  * Promote quality methods with users and providers   + Education - Measurement principles   + Calibration and Traceability (e.g. ECV)   + Record keeping, Metadata   + Reliability and resilience   + RIC |
| OPAG C: New Methods and Technologies  * Stimulate the transition from new science and technology to implementation * Identify and characterize measurement from emerging technologies   + CIMO/HMEI partnership   + Technical conferences   + Inter-operability   + Instrument Intercomparisons   + Lead Centre/Test Bed |

## Traits CIMO must Exhibit:

* Need to be Agile
* Need to be Adaptable and Flexible
* Need to be Impartial
* Need to be Open-minded

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