CGMS Agency Best Practices in support to DCP Transmitter (TX) Certification Process

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Coordination Group for Meteorological Satellites

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TABLE OF CONTENTS

1. INTRODUCTION

This document presents the CGMS agency best practices (BP) in support to DCP TX (Transmitter) certification process for Satellite Operators offering Data Collection Services (DCS) to Users and DCP Transmitter manufacturers.

It is derived from answers to a specific CGMS WGI DCP certification questionnaire to satellite operators and manufacturers, as well as from lessons learnt during the METEOSAT HRDCP certification process and additionally from further discussions with NOAA.

Each of the following Best Practices are already used by at least one of the Satellite Operators offering DCS.

2. BEST PRACTICES

2.1 BP.01 MINIMISE THE COSTS FOR THE CERTIFICATION PROCESS

To encourage and promote the continued take-up of DCPs, the cost to manufacturers for the certification process should be minimised. If too expensive, it may impact the decision of a manufacturer to produce and certify a new design, as the return on investment may not make it financially worthwhile.

Best Practice BP.01: The certification process should be implemented in such a way to minimise the costs to the manufacturer.

2.2 BP.02 PROVIDE AN ONLINE REGISTRATION PROCESS FOR AN MANUFACTURER CERTIFICATION

The registration process to apply for a DCP certification is very different for each agency, ranging from semi-automatic to fully manual. A workflow-type on-line process could be implemented to simplify the application process.

Best Practice BP.02: The manufacturer should be able to register for certification process online. This process should be as automated as possible.

2.3 BP.03 THE MANUFACTURER SHOULD PERFORM INITIAL TESTING AND SUPPLY RESULTS TO THE SATELLITE OPERATOR

The manufacturer should submit their DCP test plan for approval to relevant satellite agency. The agency should review the test plan to ensure that is covers all aspects needed for certification. Once approval of the test plan is given the manufacturer should perform the initial internal tests at the manufacturer's premises and then provide these test results to the satellite agency.

Best Practice BP.03: *Manufacturer should submit their DCP test plan for approval to relevant satellite agency and following approval conduct factory testing and provide results back to the agency.*

2.4 BP.04 FAVOURABLE ASSESSMENT OF THE INITIAL REPORT SHOULD LEAD TO PRELIMINARY OVER THE AIR TESTING

Over the air testing prior to the actual certification is a very good method to check the DCP transmitter's performance. This should only be done after the test report has been analysed to ascertain that the transmitter's characteristics would not interfere with other users or cause any satellite issues. This can identify issues prior to a live on-site test with the agency. The use of a test channel for the manufacturer authorising an over the air testing monitored by the agency, in constant coordination with the manufacturer, to reduce any potential impact in the DCP operational channels, whereby the test transmission can be stopped immediately.

Best Practice BP.04: *Where feasible, preliminary over-the air testing from the manufacturer's premises should be performed following successful factory testing.*

2.5 BP.05 PROVIDE TEST DCP ENCODING MESSAGE AND EXAMPLES OF THE CODING PROCESS AT THE DIFFERENT STEPS

It has proved very useful to provide the manufacturer examples of the DCP encoding at the various steps of the encoding. This enables the manufacturer to compare their encoding results against a known result. This can also include a blind test, where the input data provided by the agency is 'unknown' to the manufacturer. This can help to prove without doubt that the manufacturer had interpreted the coding in the correct way.

Best Practice BP.05: *Manufacturers and agency should ensure that the message encoding is correct during the different test steps, this may include a blind test.*

2.6 BP.06 CONTINGENCY TIME SHOULD BE BUILT INTO ANY CERTIFICATION PLAN

It is recognised that testing does not always go as smoothly as planned. Due to the effort required to setup the testing it is a very good idea to allow at least 2 contingency days into the certification plan.

Best Practice BP.06: *Ensure adequate contingency time is built into the testing schedule*