API Ch.21.1 1993

"Flow measurement using Electronic Metering Systems - Electronic Gas Measurement"
Remark: including liquid measurement facilities

Project number	:	13200541
Test report number	:	NMi-13200541-3
Issued by	:	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands
Test address	:	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands
Test specifications	:	API Ch. 21.1: 1993
Manufacturer	:	Dynamic Flowcomputers 12603 Southwest Freeway #320 Stafford, TX 77477 United States of America Reference: Mr. B. Wollard
Test period	:	1 October 2013 – 1 December 2013
Issue date	:	19 December 2013
Signatures	:	

Ing. H.S. Schouten
Senior Approvals Expert

J.C.M. van den Berg
Approvals Expert

Test evaluation number: NMi-13200541-3

Instrument: Calculating and indicating device, type Micro MV, make Dynamic Flow Computers

Evaluated object

The calculating and indicating device, type Micro MV, make Dynamic Flow Computers, is a measuring instrument intended to measure the mass, volume and energy properties liquids and gas, and to perform calculations using the measured items.

The basic functions of the instrument are:
- measurement of volume, mass and energy properties in liquids and gas;
- calculation to reference conditions, based on various algorithms;
- indication of measured and calculated values.
- interfacing to transducer(s) and to higher systems.

The calculating and indicating device is described as follows:
- a built-for-purpose Measuring instrument (an embedded system)
- transmission of legally relevant data
- instrument specific properties.

Software identification

Liquid application: PC application version 2.19
                     Flow computer version 6.11.15
                     Flow computer application name MicroMVL

Gas application: PC application version 1.27
                     Flow computer version 6.11.00
                     Flow computer application name MicroMVG

Tested device

For these tests the calculating and indicating device make Dynamic Flow computers, type Micro MV, serial number DEMO024 was used.

Remark: Generally, of most significance for the flow computer are the audit and reporting requirements and the security aspects. The calculations are taken from other standards.

"n.a." means "not applicable"

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.1	**Introduction and Scope**	informative			API Chapter 21.1 encompasses all the metering equipment, the flow computer is only one part of this. Most applicable to the flow computer are chapters 1.4, 1.5, 1.6, 1.7.6, 1.8, 1.9 and Appendix B.
1.2	**Description of an Electronic Gas Measurement System**				
1.2.1	**Elements of a Gas Measurement System**				
1.2.1.1	Introduction Defines primary measurement devices; orifice, turbine. Defines secondary devices; static pressure, temperature, differential pressure, density. Defines tertiary device; electronic computer for calculating flow.	pass			The Micro MV is a tertiary device.
1.2.1.2	Transducers/Transmitters			n.a.	
1.2.1.3	Signal Processing	pass			The electronic signals from the secondary devices transmit information to the tertiary device (electronic flow computer). The tertiary device receives the information, combines it with programmed instructions and calculates the quantity of gas flowing through the primary device.
1.2.1.4	System's Accuracy	pass			See the test reports NMi-13200541-1 and NMi-13200541-2.
1.2.1.5	Data Processing	pass			32 Bit

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.2.2	**Definitions**				
1.2.2.1	Introduction	informative			
1.2.2.2	Words and Terms Defines Electronic Gas Measurement (EGM) as the process whereby gas flow rates are calculated by means of an electronic computer.	informative			
1.2.3	**Symbols**	informative			
1.3	**Referenced Publications**	informative			
1.4	**Electronic Gas Measurement System Algorithms**	informative			Describes gas measurement algorithms but defers to the latest revision of API Ch.14.3 (AGA3), AGA8 detailed, AGA8 Gross 1 and AGA8 Gross 2.
1.4.1	**Overview** Describes a statistical method for known as the Rans Methodology for flow total calculations to overcome a limitation where not all of the data required for the flow calculation can be obtained within the same time period. The method splits the calculation into a faster part for rapidly changing measured data, and a slower part for calculated data.	informative			
1.4.2	**Differential Meter Measurement** Describes a differential meter measurement method for splitting the flow calculation into an integral value (IV) calculated at least every second, and an integral multiplier value (IMV) calculated over a longer period, maximum 1 hour.	informative			The device can input information from differential pressure transmitter, used for differential meter measurement.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.4.2.1	Sampling Flow Variables – Differential Meter Measurement	pass			All dynamic input variables are sampled at least once every second. Starting from that point, a maximum allowed flow can be calculated.
1.4.2.2	Integral Value Calculation	pass			Integral value is calculated internally prior to being applied to to the flow algorithm. This is expressed in the form of Dp ext. for reporting purposes.
1.4.2.3	Low Flow Detection A low flow cutoff point for differential meters should be determined by the contractually concerned parties based upon a realistic assessment of site conditions.	pass			A low flow cutoff value is one of the parameters that can be manually entered.
1.4.2.4	Integral Multiplier Value Calculation	pass			See above integral value calculation
1.4.2.5	Quantity Calculation – Differential Meter Measurement	pass			Quantity calculation is provided via standard published algorithm in which flow rate is monitored once a second and logged as totalized values.
1.4.2.6	Example: Flow Equation Application – Differential Meter Measurement The example is in accordance with API MPMS Chapter 14.3, Part 3.	pass			The AGA3 document is the same as API 14.3.
1.4.3	**Linear Meter Measurement** Describes a linear meter measurement method for splitting the flow calculation into an actual volumetric quantity (AVQ) incremented at least every second, and a base multiplier value (BMV) calculated over a longer period, maximum 1 hour.	pass			The Micro MV can be programmed for linear meter measurement. The actual volumetric quantity is calculated at least every second. The base multiplier is calculated over a period of a maximum of 5 seconds.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.4.3.1	Sampling Flow Variables – Linear Meter Measurement Demand: Minimum sampling frequency once every five seconds.	pass			Averaging is allowable set to 1-5 seconds.
1.4.3.2	Actual Volumetric Quantity Calculation	pass			In case of volume or mass inpulse input every pulse from the meter is counted. The k factor can be programmed.
1.4.3.3	No Flow Detection

No flow shall be defined as an absence of counts over any base multiplier period. During no flow conditions, sampled input variables shall be discarded from the averages. | pass | | | All averages are based on Flow weighted unless otherwise stated. Under no flow condition averages are not indexed. |
| 1.4.3.4 | Base Multiplier Value Calculation | pass | | | The Base Multiplier Value is also known as Volume Conversion Factor. The Micro MV calculates the Base Volume, also known as Volume at reference conditions. |
| 1.4.3.5 | Quantity Calculation – Linear Meter Measurement | pass | | | |
| 1.4.3.6 | Example: Flow Equation Application – Linear Meter Measurement

The example is in accordance with AGA Report No.7 1981. | pass | | | |
| **1.4.4** | **Averaging Techniques** | pass | | | Flow dependent time-weighted linear averaging. |
| **1.4.5** | **Hourly and Daily Quantity Calculation** | pass | | | Can be made available as historical reports. |
| **1.4.6** | **Compressibility, Density and Heating Value** | pass | | | Compressibility, density and heating value are scanned or calculated at least once every second. Starting from that point, a maximum allowed flow can be calculated.

See the test reports NMi-13200541-1 and -2, issued by NMi Certin. |

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5	**Data Availability** The section defines the minimum data that should be available on displays and in reports.	pass			Audit trail, Calibration, Hourly, Daily, Monthly, Alarms, and Batch
1.5.1	**Differential Meter Installations**				
1.5.1.1	**On-site Calculations**				
1.5.1.1.1	Data collected since the last completed data collection period a. Hourly average temperature. b. Hourly average pressure. c. Hourly average differential pressure. d. Live input relative density. e. Live input energy content. f. Live input composition g. Live input density h. Hourly quantity totals i. Dates and times for all averages and totals (Displays show Current and Previous period values, dated reports show historical period values) j. Total quantity accumulated during each contractually specified measurement period	pass			All implemented

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5.1.1.2	Input variable values affecting measurement a. Meter run reference diameter. b. Orifice bore reference inside diameter. c. Calibrated span of the pressure transducer. d. Calibrated span of the differential pressure transducer. e. Calibrated span of the temperature transducer. f. Other terms needed for calculation.	pass			All implemented
1.5.1.1.3	Instantaneous readings or displays a. Instantaneous pressure. b. Instantaneous differential pressure. c. Instantaneous temperature. d. Instantaneous flowrate. e. Instantaneous accumulated quantity. f. Alarm or error conditions. g. Relative density. h. Energy content. i. Composition. j. Density.	pass			All implemented This is located in the "Snapshot view"

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5.1.1.4	Electronic or hard copy records a. Equipment calibration values for pressure. b. Equipment calibration values for differential pressure. c. Equipment calibration values for temperature. d. Old and new values for changes to any input variable that will affect calculated quantities. e. Complete summary of all alarm or error conditions affecting measurement. f. Daily summary indicating the hours for flow or no flow. g. Date and time of all events.	pass			Available in the Historical reports area of software. Also requestable via modbus
1.5.1.1.5	Quantity statement a. Daily custody transfer quantity totals. b. Average pressure. c. Average differential pressure. d. Average temperature. e. Live relative density. f. Live energy content. g. Live composition. h. Live density.	pass			All Implemented
1.5.1.1.6	The unique identification number of the metering system	pass			Available
1.5.1.1.7	All original data, plus all subsequent local edits to that data	pass			Available
1.5.1.2	**Off-site Calculations**				
1.5.1.2.1	Instantaneous readings or displays				Available

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5.1.2.2	The unique identification number of the metering system a. Instantaneous pressure. b. Instantaneous differential pressure. c. Instantaneous temperature. d. Instantaneous flowrate. e. Instantaneous accumulated quantity. f. Alarm or error conditions. g. Relative density. h. Energy content. i. Composition. j. Density.	pass			Snapshot
1.5.1.2.3	The same data as on-site calculations			n.a.	Not applicable to the Micro MV.
1.5.1.2.4	Indications of alarm or error conditions			n.a.	Not applicable to the Micro MV.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5.2	**Linear Meter Installations**				
1.5.2.1	On-site Calculations				
1.5.2.1.1	Data collected since the last completed data collection period a. Hourly average temperature. b. Hourly average pressure. c. Live input relative density. d. Live input energy content. e. Live input composition f. Live input density g. Hourly quantity totals h. Dates and times for all averages and totals (Displays show Current and Previous period values, dated reports show historical period values) i. Total quantity accumulated during each contractually specified measurement period	pass			Historical Reports available
1.5.2.1.2	Input variable values affecting measurement a. Meter Factor. b. K-Factor. c. Calibrated span of the pressure transducer. d. Calibrated span of the temperature transducer. e. Other terms needed for calculation.	pass			Assignable in software configuration

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5.2.1.3	Instantaneous readings or displays a. Instantaneous pressure. b. Instantaneous temperature. c. Instantaneous flowrate. d. Instantaneous accumulated quantity. e. Alarm or error conditions. f. Relative density. g. Energy content. h. Composition. i. Density.	pass			All parameters can be made visible on the display after selecting the appropriate screen. They can be made visible on a remote computer also, using the appropriate screens or using a dedicated screen showing them all.
1.5.2.1.4	Electronic or hard copy records a. Equipment calibration values for pressure. b. Equipment calibration values for differential pressure. c. Equipment calibration values for temperature. d. Old and new values for changes to any input variable that will affect calculated quantities. e. Complete summary of all alarm or error conditions affecting measurement. f. Daily summary indicating the hours for flow or no flow. g. Date and time of all events.	pass			All records can be made available as Historical Reports. Those reports can be printed as well.
1.5.2.1.5	Quantity statement a. Daily custody transfer quantity totals. b. Average pressure. c. Average temperature. d. Live relative density. e. Live energy content. f. Live composition. g. Live density.	pass			Snapshot
1.5.2.1.6	The unique identification number of the metering system	pass			Snapshot

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.5.2.1.7	All original data, plus all subsequent local edits to that data	pass			Original data can be made available within the historical data. Other demands do not apply to the Micro Mv.
1.5.2.2	Off-site Calculations				
1.5.2.2.1	Instantaneous readings or displays a. Instantaneous pressure. b. Instantaneous temperature. c. Instantaneous flowrate. d. Instantaneous accumulated quantity. e. Alarm or error conditions. f. Relative density. g. Energy content. h. Composition. i. Density.	pass			All parameters can be made visible on the display after selecting the appropriate screen. They can be made visible on a remote computer also, using the appropriate screens or using a dedicated screen showing them all.
1.5.2.2.2	The unique identification number of the metering system	pass			Snapshot
1.5.2.2.3	The same data as on-site calculations			n.a.	Not applicable to the Micro MV.
1.5.2.2.4	Indications of alarm or error conditions			n.a.	Not applicable to the Micro MV.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.6	**Audit and Reporting Requirements**				
1.6.1	**Introduction** An electronic gas measurement system shall be capable of establishing an audit trail by compiling and retaining sufficient information for the purpose of verifying daily and hourly quantities. The audit trail shall include transaction records, configuration logs, event logs, corrected transaction records, and field test reports. The records and reports in this section may be created on-site or off-site, or a combination of both.	pass			All available as historical reports.
1.6.2	**Quantity Transaction Record** An historical data report to show the accounted quantities of volume, mass and energy. Each report has a unique identification number and a time stamp.	pass			All available as historical reports.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.6.2.1	Daily Quantity Transaction Record for Differential Type Meters There will be one daily quantity transaction record for each contract day plus an additional daily quantity transaction record for each time one or more constant flow parameters are changed. Constant flow parameters include only those measured or known parameters that do not depend on any averaged logged parameter. Custody transfer reports: a. Period date and time. b. Daily quantity totals. c. Flow time within the period. d. Daily average temperature. e. Daily average pressure. f. Daily average differential pressure. g. Daily average relative density.	pass			All available as historical reports.
1.6.2.2	Hourly Quantity Transaction Record for Differential Type Meters Custody transfer reports: a. Period date and time. b. Hourly quantity totals. c. Flow time within the period. d. Hourly average temperature. e. Hourly average pressure. f. Hourly average differential pressure. g. Hourly average relative density.	pass			All available as historical reports.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.6.2.3	Daily Quantity Transaction Record for Linear Type Meters Custody transfer reports: a. Period date and time. b. Daily corrected quantity totals. c. Daily uncorrected quantity totals. d. Flow time within the period. e. Daily average temperature. f. Daily average pressure. g. Daily average relative density.	pass			All available as historical reports.
1.6.2.4	Hourly Quantity Transaction Record for Linear Type Meters Custody transfer reports: a. Period date and time. b. Hourly corrected quantity totals. c. Hourly uncorrected quantity totals. d. Flow time within the period. e. Hourly average temperature. f. Hourly average pressure. g. Hourly average relative density.	pass			All available as historical reports.
1.6.3	**Algorithm Identification** Algorithm identification shall be provided to identify the calculations performed in the EGM.	pass			Algorithm is indicated in historical reporting for view when analyzing historical data for accuracy and completeness.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.6.4	**Configuration Log** A log to show all constant flow parameters used in the generation of a quantity transaction record. Differential Meter a. Meter identifier b. Date and time c. Contract hour d. Atmospheric pressure (if appropriate) e. Pressure base f. Temperature base g. Meter tube reference inside diameter h. Orifice plate reference bore size i. Static pressure tap location j. Orifice tap configuration k. Orifice plate material l. Meter tube material m. Calibrated static pressure range n. Calibrated differential pressure range o. Calibrated temperature range p. Low differential pressure cut off q. Density (if not live) r. Compressibility (if not live) s. Gas components (if not live)	pass			Audit trail report is located in the flow computer operating software. Audit trail logs the most recent 100 data entries in which any device parameter is manipulated.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.6.4 (cont'd)	Linear Meter a. Meter identifier b. Date and time c. Contract hour d. Atmospheric pressure (if appropriate) e. Pressure base f. Temperature base g. Meter factor h. K factor i. Density (if not live) j. Compressibility (if not live) k. Gas components (if not live) l. Calibrated static pressure range m. Calibrated temperature range	pass			Audit trail report is located in the flow computer operating software. Audit trail logs the most recent 100 data entries in which any device parameter is manipulated.
1.6.5	**Event Log** A log to record exceptions and changes to flow parameters, contained in the configuration log, that have an effect on a quantity transaction record. The old and new value, along with the date and time of the change, shall be logged.	pass			Event log is reffered to as Audit trail and is located in the historical reports section of software.
1.6.6	**Corrected Quantity Transaction Record** The corrected quantity transaction record identifies changes to the original quantity transaction record.			n.a.	Not applicable to the Micro MV. (Applies to a complete measuring system during use in the field).

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.6.7	**Test Record** Any document (electronic or printed) produced by testing or calibration which affects metering. The documentation shall include calibration/verification reports; orifice plate and equipment change tickets; and peripheral equipment evaluation reports.			n.a.	Not applicable to the Micro MV. (Applies to a complete measuring system during use in the field).
1.6.8	**Data Retention** Unless specified by regulation, tariff, or contract, the minimum retention period for the electronic flow measurement audit trail data shall be two years.			n.a	Does not apply to a tertiary system. Customer shall retrieve data and host on local server or storage device.
1.7	**Equipment Installation**				
1.7.1	**Transducers/Transmitters**			n.a.	Not applicable to the Micro MV.
1.7.2	**Gauge/Impulse Lines**			n.a.	Not applicable to the Micro MV.
1.7.3	**EGM Devices and Associated Communications**			n.a.	Not applicable to the Micro MV.
1.7.4	**Peripherals**			n.a.	Not applicable to the Micro MV.
1.7.5	**Cabling**			n.a.	Not applicable to the Micro MV.
1.7.6	**Commissioning**				
1.8	**Equipment Validation and Verification**	pass			This section applies to all system devices, it relates to the Micro MV inputs such as ADCs, frequency and pulse input calibration, and to DAC and pulse output calibration. Criteria for the flow computer input signals should be specified. See the owner's manuals for information and instruction.
1.8.1	**Scope**				
1.8.2	**Devices Requiring Calibration/Verification**	pass			The measuring inputs of the Micro MV (impulse counting, temperature input, pressure input, density input) are subject to this demand. See the owner's manuals for information and instruction.

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.8.3	**Calibration and Verification Procedures**	pass			The measuring inputs of the Micro MV (impulse counting, temperature input, pressure input, density input) are subject to this demand.
1.8.3.1	Calibration/Verification of Pressure and Temperature Devices				
1.8.3.2	Verification of Pulse Counters				See the owner's manuals for information and instruction.
1.8.3.3	Calibration/Verification of Analysers				
1.8.3.4	Calibration/Verification of Densitometers and Gravitometers				
1.8.4	**Frequency of Verification**	Articles about quality and performance maintenance, not about the Micro MV itself.			
1.8.5	**Ambient Temperature and Line Pressure Effects**				
1.8.5.1	**Ambient Temperature Effect**				
1.8.5.2	**Line Pressure Effect**				
1.8.6	**Calibration and Verification Equipment**				
1.9	**Security**				
1.9.1	**Access**				
1.9.1.1	General Comment			n.a.	
1.9.1.2	General Comment	pass			Access to the Micro MV can be limited by hardware seals and by 5 layers of security codes.
1.9.2	Restricting Access	pass			
1.9.2.1	Unauthorised Access	pass			
1.9.2.2	Additional Security Measures	pass			
1.9.2.3	Security Code	pass			
1.9.3	**Integrity of Logged Data**	pass			Data is stored encrypted level A security to prevent modification of reports data.
1.9.3.1	Log All Changes	pass			All changes logged new and old values with time stamp in calibration report.
1.9.3.2	Audit Trail	pass			All data entry and/or modification is logged in the Audit trail with time stamp provided.
1.9.4	**Algorithm Protection**	pass			Algorithms are embedded within inaccessible area of memory not allowing modification without application instability.
1.9.5	**Original Data**	pass			See 1.9.3
1.9.6	**Memory Protection**				

Paragraph	Requirement	Pass	Fail	n.a.	Comments
1.9.6.1	Non-Volatile Memory	pass			Non-volatile memory is maintained by battery backing. The amount of data retained depends on the specific data type. The battery is capable of maintaining memory in usable state for maximum of 2 years.
1.9.6.2	Log Power Fail	pass			Power fail is logged with date and time of fail as well as date and time of start
1.9.7	**Error Checking**	pass			Checksum data correlation for error checking.
Appendix A	**RANS Methodology for System Flow Measurement Algorithms** Used to determine the sampling rate for the flow calculation method described in 1.4.2.			n.a.	Sample rate is user selectable from 1 – 5 second for re-averaging for flow calculation.
Appendix B	**Averaging Techniques** Information intended to be use as guidance; not demands.				
Appendix C	**Calibration and Verification Equipment**	Informative.			

Legenda:	Controle checklist, Controle door auteur
V = OK	projectnummer: 13200541
X = Nog aanpassen	Evt. bedrijf: Dynamic Flow Control
- = Niet van toepassing	Evt. type: Micro MV
	Certificaat nr.: NMi-13200541-3

v	Certificaatnummers gelijk over alle kopteksten en in de tekst.
v	Projectnummers gelijk in alle kopteksten en rapporten
v	Paginanummering correct op alle pagina's
-	Specificaties in OIML certificaat, testrapporten, toelatingen en testcertificaten komen overeen
v	Juiste EUT onderzocht
-	Remarks over revisie van het certificaat klopt (TC is anders dan TAC)
v	Ondertekening correct (layout en NB, DB of geen Body) (concept VMP: certificerende instelling) (Regeling Voertuigen & Regeling Ademanalyse : keuringsinstelling)

-	Head Certification Board (geen of / of the)	-	Leiter des Zertifizierungsausschusses
-	Chef du comité de certification	-	Hoofd Certificatiebestuur

? ✓	Voetteksten correct (juiste RvA logo, MAA logo (19 juni 2009 voor NAWI, juni 2007 voor load cells), verwijzing naar nando website voor toelatingen NAWI/MID maar niet voor Evaluation Certificates en Parts Certificates) VERKEER: "Bezwaar tegen besluit..." verwijderen uit voettekst
-	Koptekst goed gespeld *Opmerking: Officiëel is de juiste wijze voor de MID: "EC-type examination certificate", dit wordt toegepast voor nieuwe weeg- en verkeerdocumenten. Echter, "EC type-examination certificate" blijft toegestaan (alle overige documenten). Oude documenten worden niet aangepast. Voor NAWI: "EC type-approval certificate"*
-	Type-examination nummer vet gedrukt (OIML nummer niet vet gedrukt)
v	Datum van ondertekening correct (ook de taal)
-	Geldigheidsdatum correct (ook de taal)
-	Juist gebruik van SI-eenheden, gebruik van komma's als decimaal teken, spatie tussen getal en eenheid
-	Alle tekeningen / documenten genoemd in de documentatiefolder staan ook in de tekst en vice versa
v	Gebruik van "Manufacturer" (ipv "Applicant") of "Producer" (voor Parts en Evaluation Certificates)
-	Verzegeling correct beschreven, bijv. adjustment counter value+benoeming op opschriftenplaat
-	Voor NAWI en MID: tekst voor merktekens op de verzegeling niet aanwezig
-	Voor NAWI nieuwe template gebruikt
-	"Direct Sales to the public" consequent gebruikt (genoemd in 1.2, POS & EFT, onderzocht in testrapport)
-	Voor kWh staat in de history file een verwijzing naar het netwerk, waar 2-150 kHz resultaten vermeld staan
-	Vertalingen komen overeen met de originele tekst
v	Klant heeft goedkeuring gegeven op drafts; emails met goedkeuring vastgelegd in netwerkmap (incl. gebruik van de juiste adressen)
-	Geprepareerde documenten (deliverables) komen overeen met de PIF/OF
-	PIF/OF uitgedraaid

	"Reason of changes" / "Project definition" ingevuld
	Ondertekend door approval engineer

-	Er bestaat een ongestempelde documentatiefolder in de directory
v	History file is ingevuld
-	Elektronisch testrapport (pdf) aanwezig (dit mag een ongestempelde versie zijn)
v	EUT

v	EUT terug naar klant; ingepakt en verzend bon
-	EUT vernietigen

v	Directory structuur volgens de afspraken
-	Alle noodzakelijke verklaringen zijn door de fabrikant aangeleverd:

-	A written declaration that the same application has not been lodged with another Notified Body
-	A declaration that the instrument is produced with a consistent production (alleen MID)
-	A declaration via which harmonised standards or normative documents conformity with the essential requirements is presumed
-	If no harmonised standards or normative documents are applied, a declaration of the alternative applied solution is presented
-	Permission from the owner of test certificates and evaluation certificates to use these certificates

Datum: 19 december 2013   Paraaf: *B*