

Distribution:  To all Team Leads and CCU System Engineers.	Document No.	<b>WAG9-9K-EN5-RLN-12</b>
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## Release of CCU software version 2.05

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## 1. Purpose

This document explains the process of for version management, monitoring & release of CCU, ACU, IOs and Driver Display software for Locomotives.

## 2. Scope

The scope of the documents is applicable for following activities.

- i. CCU,IOs and DDU software release and status monitoring
- ii. CCU,IOs and DDU Software version management
- iii. CCU,IOs and Display Software Tag management

## 3. Abbreviations and Definition

CCU:	Central control Unit
DDU:	Driver Display Unit
PGM:	Program file
ACU:	Auxiliary Control Unit
IOs :	Input Output modules

## 4. Hardware Configurations

The device has to be fulfill following conditions.

Device	Order Nos. / Make
CCU (MCU2)	6FH5155-
DDU	1PA2B00075622
ACUs	M1300/M2000
IOs	LUTZE LION / LEROY
DDU AMiT	APTXA003C

## 5. Released Software details

Part.	Version released: 2.04 Dt:21-Oct-2023	Version to be released: 2.05 Dt:04-Dec-2023
<b>MCU_CCU</b>		
- Operating System	2.05, 10-May-20	2.05 10-May-20
- Hardware module	70.01, 10-May-20	70.01, 10-May-20
- ETH2-Firmware	3.1 4-Dec-20	3.1 4-Dec-20
- Communication Drivers	17.0, 29-Aug-19	17.0, 29-Aug-19
- NSDB	2.80 4-Jul-23	2.80 4-Jul-23
- Program	2.04 21- Sep -23	<b>2.05</b> <b>04- Dec -23</b>
- Parameter	0.213, 8-May-23	<b>0.216</b> <b>04-Dec-23</b>
<b>DDU</b>		
- Program	1.2.2 – 9K & 1.1.7 – 6K 21- Sep -23	<u><b>SIEMENS DISPLAY</b></u> 1.1.8(6K)/1.1.2(WAP-7)/1.2.3(9K) <b>04-Dec-23</b>
- NSDB	2.66 20-Oct-21	<u><b>AMIT Display</b></u> <b>2.1.1 04-Dec-23</b> <u><b>SIEMENS DISPLAY &amp; AMIT Display</b></u> 2.66 20-Oct-21
<b>ACU</b>		
- Program	2.04, 30-Mar-2023	<b>2.06, 04-Dec-2023</b>
- NSDB	1.67	1.67
<b>IO Station</b>		
<b>Lutze IO FW VER 1.05 &amp; 1.2</b>		
- Bus coupler Firmware	1.05/1.22	1.05/1.22
- NSDB	1.00, 0.02,0.01 and 1 respectively. 10/May/2020	1.00, 0.02,0.01 and 1 respectively. 10/May/2020
<b>Lutze IO FW VER 2.0</b>		
- Bus coupler Firmware	2	2
- NSDB	1.00 (11,12,21 &22), 13/Sept/2022	1.00 (11,12,21 &22), 13/Sept/2022
<b>LEROY IO Ver</b>		
Application	0.21 for IO Station 11 & 21 0.52 for IO Station 12 & 22	0.21 for IO Station 11 & 21 0.52 for IO Station 12 & 22
- NSDB	1.02	1.02

## 6. Software functions and added features

**Annexure I:** List of changes carried out for software version 2.05.

## 7. Buffer

The release includes the below mentioned buffer signals of energy meter- only for 6K locomotives which is kept for monitoring on locomotives.

- WAG9\_6KBuffer.mon

## 8. References

- i. Requirement Email by Mr. Pandey, Arvind (RC-IN SMO RS PE) Dt 18.11.2023.
- ii. Requirement Email by Mr. Tiwari, Abhay Kumar (RC-INSMOCSRS1)  
Dt.22.11.2023

## 9. Appendices

- i. WAG9\_CCU\_Control Software monitoring

## 10. Release Scope

This document releases the above mentioned parts for being used for testing in a secured environment and test rides (test rides accompanied by Siemens personnel).

For testing in service in public railway environment the requirements for normal service have to be fulfilled for the entire vehicle. The release for that is not part of this document. This document also does not provide the release for normal commercial service.

For testing in service and normal commercial service the project management has to give a separate release. If all conditions are met, this document may be referenced by the general vehicle release.

## 11. Author, Functional Coordination

### 11.1 Author

Ravuri Rama Satya Prakash RC-IN SMO RS EN 5

Sgd. <Author

### 11.2 Functional Coordination

This document was agreed with:

First and Last Name	Org. code	Review criterion	Date
Amod Dange	RC-IN SMO RS EN 5	Technical	04/Dec/2023

**Revision Sheet:**

<b>Revision</b>	<b>Date</b>	<b>Section</b>	<b>Description of change</b>
0	27.09.2021	All	1 <sup>st</sup> Edition
1	20.10.2021	All	2 <sup>nd</sup> Edition
3	03.02.2022	All	3 <sup>rd</sup> Edition
3	29.06.2022	All	4 <sup>th</sup> Edition
4	13.09.2022	All	5 <sup>th</sup> Edition
5	30.12.2022	All	6 <sup>th</sup> Edition
6	08.05.2023	All	7 <sup>th</sup> Edition
7	04.07.2023	All	8 <sup>th</sup> Edition
8	21.09.2023	All	9 <sup>th</sup> Edition
9	04.12.2023	All	10 <sup>Th</sup> Edition

Sgd. &lt;Amod Dange

Sgd. &lt;Carsten Baelum

**Annexure: I, Ver. 2.05 WAG9-9K-EN5-RLN-12****Changes done in Ver. 2.05:****1. TFP oil temp too high TE/BE reduced and VCB lock.**

In case of the temp. element A and B difference of 10 degC, DDS message will be logged and the temperature from the sensor will not be taken into consideration.

In case of one element of Trafo temp. failed the faulty element should be ignored and detection to be switch over to healthy element of particular temp. sensor, corresponding DDS message will be logged.

If both sensors failed, Prio 1 message to be logged with VCB open.

In both elements are healthy, if maximum of both element temperature value exceeds the limit 84 degC.

- a. DDS message to be logged.
- b. Main power off

**2. AUX exiting from ECO mode the ACU2 was ramping down and then ramping up.**

This is due to delay in receipt of AUX ready bit from AUX-1. Siemens has corrected the logic in AUX software to maintain the state of other AUX frequencies during the switching from ECO mode.

**3. In AUX redundancy mode the unloader valve taking more time**

Unloader valve was taking 14 Sec of time and compressor was kicking in before the Unloader valve was OFF whenever any AUX is isolated. When All AUX are cut in functioning was found normal. Logic has been corrected and unloader valve will ON and will be OFF before the compressor starts.

**4. FLG node increasing from 570 when BP pressure below 5 KG/cm2**

This was due to traction interlock getting activated whenever the BP pressure is dropping below 4.8Kg/cm2. The logic has been corrected and traction allowed till BP pressure 4.6Kg/Cm2.

**5. Battery discharging pictograph to be modified. Only should indicated only if BC is faulty.**

DDU Pictogram is corrected as per requirement.

**6. KB VCD Cycle reset time taking more then 35 sec.**

Resetting time has been corrected to 32Sec.

**7. Separation of Temperature reaction-1 for controllers.**

All Sub System Controller messages has been separated for Temperature Reaction-1 fault's instead of a common fault for all sub systems (FC-0880).

**8. AUX winding Over current parameter in Diagnostic Event.**

Both Current value parameters has been added in Diagnostic event of FC-0712.

**9. For Traction cutout message the traction related parameters are missing in the background data.**

Siemens has added the traction related parameters in Traction cutout messages.

**10. The background parameter the filter contactor command is showing.**

Siemens has corrected and added filter contactor 8.2,8.1 & 8.41 status change from trigger to feedback.

**11. Inclusion of 43 parameters for continuous recording.**

Siemens has added all 43 parameters as per RDSO letter No. EL/3.1.35/17 dated 28.04.23.

**12. Inclusion of Trafo Oil Pressure in Event data pack.**

Oil Pressure parameters has been added in diagnostic.

13. Failure Mode to be activated in WAP-7 Locomotive.

14. Traction environment data pack added for all traction related faults.

15. MR logic for HOG ON is removed to facilitate HOG supply in case of low MR conditions also.

16. HLC will be isolate in case of Transformer oil pumps are not working.

17. Panto lowered for 10mins POP message added.