



INSTRUCTION TO SERVICE

ITS: 59005

SECTION:	219 Engine and Powertrain
WRITTEN BY:	Mike Pearson
SUBJECT:	Document BAE HDS300 traction motor program update

ITS59005

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PROCEDURE:

1. Turn the main battery disconnect switch to the "OFF" position.
2. Follow BAE instruction as per;



COORDINATION MEMORANDUM

DATE: June 25, 2020

Project Name: NFI Hybrid Electric Bus Program	Memo Number: CM-NF-20-002	REQ./DA. Or Other NO. 1006723 – HSAM.PSE
Subject: Authorization for Installation of NFR10.0.2.3 Software - KCM		

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ABSTRACT:

BAE Systems software version NFS10.0.2.3 is available for fleet installation on King County Metro, (KCM) vehicles equipped with the BAE Systems' propulsion system. This coordination memo provides details on the software functions and features, and a formal authorization request to KCM for installation of NFR10.0.2.3 on buses from New Flyer SR order numbers. SR2083, SR2084, SR2085, SR2086 and SR2256.

ACTIONS:

BAE Systems requests KCM review this memo and provide authorization to BAE Systems for installation of software version NFR10.0.2.3 as outlined in this coordination memo. Please provide questions or an email approval to James Duarte at james.duarte@baesystems.com

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DISCUSSION:

Based on successful completion of internal test, vehicle integration testing, extended fleet tests (inclusive of KCM buses), and vehicle operation and performance, BAE Systems has formally released a 10.0 software version for the New Flyer platforms. The formal software version release is NFR10.0.2.3

The applicable fleets for this software version are noted in Table 1.

Table 1: KCM Orders for 10.0.2.3 Level Software

OEM	Order #	# of buses	Bus Numbers
New Flyer	SR2083	22	6220-6241
New Flyer	SR2084	50	8100-8149
New Flyer	SR2085	100	8200-8299
New Flyer	SR2086	50	8150-8199
New Flyer	SR2256	28	6242-6269

These KCM buses are presently in operation with various BAE Systems software versions. The NFR10.0.2.3 software version incorporates many product improvements and features beneficial to bus operation, performance, and updates for improved diagnostics and fault analysis. The major features, functions and changes applicable to KCM vehicles are detailed in Table 2.

Table 2: 10.0.2.3 Level Software Functions and Features

Item No.	Function / Feature
1	Implemented In Use Monitor Performance Ratio (IUMPR) for Cummins engines
2	Updated fault text for improved diagnostics
3	Incorporated additional fault specific data for fault history files and updated diagnostic pages
4	Incorporated Return to Standby feature
5	Updated fault logic for F242 Performance Limit Power Loss code
6	Updates to HVES fault logic for nuisance faults
7	Updates to OBD rationality monitors
8	Updates to VTB software for module balancing issues
9	Updates to HVES software for stuck contactor detection
10	Updates to HVES and VTB software for SoC reporting
11	Incorporated logic for Generation 3 APS into APS software
12	Updates to APS fault reset logic

Software Installation Plan/Recommendations:

- Software installations will commence within two weeks of KCM authorization of this coordination memo.
- BAE Systems local service provider, (SFS) will perform the initial software installations at KCM. We anticipate that following the initial installations KCM personnel will perform software installations.
- Priority should be given to buses that are in garages for service.
- Software installation completions per week will be contingent on:
 - SFS & KCM personnel availability
 - Bus availability; Diagnosis and repair of buses out of service takes priority.
- Installation time per bus is approximately 45 minutes.
- KCM can contact James Duarte for a copy of software version NFR10.0.2.3
- SFS will work with KCM to status buses that are updated with the new software.
- Software installations should be complete no later than September 15, 2020.

CONCLUSION:

BAE Systems is proposing this program to King County Metro (KCM) to incorporate product improvements and features beneficial to bus operation, performance, and vehicle diagnostics. BAE Systems requests authorization from KCM to proceed with installation of NFR10.0.2.3 software as detailed in this coordination memo.

All parts supplied and shipped by BAE

LABOUR ESTIMATE				
	Operation	Men	Hours	Labour Time M X HR
1	Document BAE HDS300 traction motor program update	1	1.0	1.0

PARTS REQUIRED					
Item	Part Number	Description	Qty. per Coach	Units	Notes
1	See page 2 for	NFR10-0.2.3 software	1	EA	