

# Moog Flight Simulation Field Service Bulletin (FSB)

## Level: Recommended

FSB Title: Sercos II and associated computer obsolescence

Number: **MTB53136**

Affected System Model Number:

Legacy MB-EP-6DOF-60-14000kg

Legacy MB-EP-6DOF-60-12000kg

Legacy MB-EP-6DOF-60-8000kg

Affected Component(s): MRC04160-101; MRC02079-301;  
CLC97033-307; CLC97033-310

Issue Date: 09-04-2024

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**Revision History**

Rev	Pages	Description	Status *1)	Initials	Date
1.00	All	Initial release	FF	TP	29-09-2017
2.00	All	Legacy MB-EP-6DOF-60-12000kg added	FF	TP	10-11-2017
3.00	All	Cabinet replacement is the only alternative	FF	TP	09-04-2024
*1)	Document Status description:		FA:	For Approval,	
FI:	For Information,		FF:	For Final, Final Issue	
FR:	For Review, Comments requested, no hold point		FC:	For Construction	

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## 1. Model / Serial Number Verification

Model	Description	Start Serial Number	End Serial Number
MSC04160-101	Sercos II PCI Computer Interface Card	All	All
MRC02079	Pentium3 RT Computer Shoebox Model	001	025
MRC02079-301			245
CLC97033-307 or CLC97033-310	This computer is sometimes used as a base for the Motion Realtime computer	All	All

## 2. Purpose

The first production series of the legacy MB-EP-6DOF/60/8000kg, MB-EP-6DOF/60/12000kg and the legacy MB-EP-6DOF/60/14000kg systems have Sercos II optical fiber field bus between the real-time computer and the servo drives. The Sercos II interface has been declared obsolete for several years and was deployed on Pentium3 computers which has also gone obsolete years ago. With this computer platform, Motion applications were provided that were based on the Moog Jetset software architecture and running on the VxWorks Operating System up till 2010. The Jetset software architecture has reached end of maintenance and support of the VxWorks OS was ended. From 2010 onwards, motion applications were delivered that were based on middleware architecture and Linux OS.

Through this FSB, Moog now regrettably must inform that repair and support capabilities for these items are exhausted. In addition, these items are being used in control cabinets where with servo drives are subjects to limited repair possibilities.

Facing a significant risk on unplanned multi-day downtime caused by fatal failure of interface card, computer or servo drive, Moog recommends considering a control cabinet replacement by the latest generation components and regulations which can operate with existing motion actuators and pneumatics.

As part of the cabinet upgrade, the latest computer/fieldbus will be introduced including the latest generation controller middleware software and user interfaces resulting in an aligned setup compared to the latest generation motion bases. This provides the advantages for support (easy access to data) and optional Automated Testing (AT).

## 3. Required Activity

Moog has delivered EP Motion Bases with Sercos II of fieldbus technology using the servo drives that can be identified by part number:

- Sercos II interface card mounted inside one of the following computers: CLC97033-307, CLC97033-310, MSC04160-101 (unconfigured) or MSC04160-301 configured
- MAM02085 and MAM02085-301 for MB-EP-6DOF-60-8000KG with Sercos II fieldbus
- MAM06277-301 for MB-EP-6DOF-60-14000KG with Sercos II fieldbus

As a mitigation to overcome the obsolescence, Moog offers the following:

- Replacement of the motion control cabinet
- Install new Motion Real-time computer 2U 19" rack mount CLC03069-311 (core-i1)
- Actuator modification; change of electrical connections. Please note that also your spare actuator will need this modification.
- Change to Linux Operating system and Application software: 'Jetset' or 'Library' to 'Middleware'. With the new software, the customer gets access to the latest generation web-based User Interface (Moog Simulation Software) which is on long-term support.

During the Cabinet replacement effort, the following will be done:

- De-commission the motion base
- Disconnect main power, disconnect/remove actuator cabling, disconnect IO interface from cabinet
- Remove old cabinet and install new cabinet, new actuator cabling and IO interface customer
- Reconnect main power
- Prepare upper joints for installation of the accelerometer kit
- Perform first power on and commissioning of the Motion base
- Optional: system actuator/drive tuning
- Perform functional tests according to Acceptance Test Procedure
- Install acceleration kit (Moog Test accelerometer kit) and run Automated Testing
- introduction of the new components and software to customer

The following documentation will be provided:

- Interface manual, CDS40298
- Acceptance Test Procedures Cabinet Upgrade.
- Moog Simulation Software GUI User Manual, CDS45333
- Electrical Schematics

Optionally, Moog can perform a motion cueing verification after the update together with a pilot.

As a result, the motion software application will be upgraded to support this new fieldbus and computer platform. Since the software is of the Middleware generation, structure of the software and configuration files will change however cueing performance is not affected as same APK control algorithms are used. Parameter naming is subject to change resulting in some conversion of legacy configuration files present in the real time computer. Moog will support this conversion when a backup of the existing legacy software is provided.

Due to migration towards the middleware architecture, changes are present in the status words that are send to the Host computer. Besides this, a legacy Host computer application should be able to communicate with the new motion application with some restrictions. Alternatively, an update of the Host could be performed to align completely with the new middleware software. A verification on the buffer lay-out will be conducted by Moog prior to the upgrade.

## 4. Safety Precautions and Special Instructions




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**Important:** The procedure described in this bulletin must be performed by Moog service personnel.

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Replenishing the spare part stock with the replaced spare part afterwards is necessary.

## TAKE A CLOSER LOOK

Solutions for motion control are available around the world. For more information, visit our Web site or contact one of the locations below.

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