ETCS Balise - Like for Like Renewal Work Instruction			WO No. Page 1 of 2
Scope:			**Date:**
Team Leader:		**Balise Type:** Fixed / Controlled	
Activity:		**ETCS BALISE LIKE FOR LIKE RENEWAL**	
Reference: PR S 41604 (ETCS Trackside Maintenance Manual), PR S 40004, PR S 40008, PR S 40009, PR S 40028, M05-503, PR S 40028 FM01 (ETCS M1), PR S 47110 (Inspection & Testing of Signalling) PR S 41015 FM123 (Site Certification Form - SCF)			
Activity No.	Task No.	**WORK DESCRIPTION**	**Completed Name/Sign**
		APPARATUS INSPECTION & PREPARATION	
NOTE		• In order to reduce the likelihood of a cable being connected to the wrong balise, only one balise shall be disconnected or re-instated at a time. • Fixed and controlled balises have the same part number and are the same item of equipment. **Alstom yellow and grey balises are interchangeable.**	
1	**1A**	Check the existing balise name on both the circular balise ID plate (on the balise) and the rectangular balise location ID plate (adjacent to the balise) against the signalling plan.	
	1B	Where required, on or adjacent to the track, mark the current position of the balise, in accordance with PR S 41604. If there is any uncertainty about the location of the old balise, its distance from the reference shown on the signalling plan will require measuring and marking.	
	1C	Examine the existing balise to see if the balise tail cable (for a controlled balise), fixings or mountings are required to be replaced.	
	1D	Examine the existing balise mountings and cable fixings to see if any special brackets or spacers are required for mounting the balise between guard rails or on slab track.	
		DATA CONFIGURATION AND PROGRAMMING	
NOTE		Fixed and controlled balises contain default data specific to each balise. Any replacement balise needs to be programmed, preferably prior to going on site.	
2	**2A**	For a new or recovered balise programmed for another location, erase data in accordance with PR S 40028.	
	2B	Determine the correct specific balise data configuration file from the 'ETCS Installed Data Form' in the circuit book.	
	2C	Load the correct specific missions and balise configuration data into the BEPT to be used for programming.	
	2D	Program the balise with the correct data as described in PR S 40028.	
	2E	**If programming is performed prior to installation:** Affix the balise ID plate, or write the balise ID on the top of the balise using a permanent marker if the balise ID plate is not available.	
	2F	Record details on PR S 40028 FM01 Balise Replacement Testing form.	
		SAFEWORKING & DISCONNECTION FROM INTERLOCKING	
3	**3A**	Determine if the ETCS equipment and any associated signalling are required to be booked out of use.	
	3B	If required, disconnect the ETCS equipment and any associated signalling, in accordance with PR S 40009.	

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		DISCONNECTION, REMOVAL AND INSTALLATION	
4	**4A**	If this is a controlled balise: Unplug the LEU output transient protection cassette (Elsafe module) for that balise, then unplug the balise tail cable from the balise.	
	4B	Remove the old balise from the track.	
	4C	Fit an identification tag to the old balise, with details from the balise ID plate. The tag must remain on the old balise as long as the balise contains configuration data.	
	4D	Remove the balise ID plate from the old balise and fit to the new balise.	
5	**5A**	Renew any defective balise fixing material or anchors.	
	5B	Install the new balise onto the existing anchors or fixings. Any removed balise must be replaced in the correct position as per the signalling plan and SCF.	
NOTE		• Moving a balise by even one sleeper can have an unwanted operational impact. • If it is not practical to repair or install new anchors/fixings between trains, use of a universal Vortok beam is permitted. This shall be treated as a temporary repair.	
	5C	**If this is a controlled balise:** ensure that the correct cable is connected, by checking the tail cable ID in the ETCS trackside junction box.	
	5D	**If this is a controlled balise:** connect the cable. Leave the LEU output transient protection cassette unplugged, at this stage.	
		CERTIFICATION	
NOTE		The person conducting the Verification process must be independent of the installation and data programming activites.	
6	**6A**	Verify that the balise has been installed in the correct position as shown on the signalling plan, and with the correct orientation (height, skew, tilts etc.) in accordance with M05-503.	
7	**7A**	Verify that the balise has been programmed correctly using the procedure described in the PR S 40028 and PR S 41604.	
8	**8A**	Perform a 'Default Balise Telegram Test' using the BEPT air-gap interface. Verify that the telegram has an M_M Count of 254 for a controlled balise or 255 for a fixed balise.	
9	**9A**	**If this is a controlled balise:** plug in the LEU output transient protection cassette for the balise.	
	9B	**If this is a controlled balise:** perform 'Controlled Balise Telegram Testing' using the BEPT air-gap interface and verify that the telegram has an M_M Count between 1 and 19 (i.e. must not be a default value).	
	9C	**If this is a controlled balise:** verify that the CRC obtained from the BEPT is the same as that listed on the 'ETCS Installed Data Form' in the circuit book.	
NOTE		The person conducting the Validation process must be independent of the installation, data programming and verification activites.	
10	**10A**	Validate the installed data against the Balise Installed Data form. (Contact Icon Infrastructure or Signal Engineer).	
	10B	Complete Balise Group Maintenance Testing form	
11	**11A**	If applicable, book the balise and any disconnected signalling, back into use.	
NOTE		Where practical, it should be confirmed with the Network Control Officer, that the driver of the first train over the balise group reported no trackside fault messages.	

I certify _____ balise at _____ location has been inspected and tested, and is fit for service.
(BALISE ID) (GEOGRAPHICAL LOCATION)

_____ _____
Print Name Position

_____ _____/_____/_____
Signature Date