# Milan / Paylink Firmware Version 3.1.11.6 Release Notice.

This is a **Beta** (3) release of the Milan / Paylink Interface firmware - code version **1.11.6**. This is a maintenance fix that adds a few minor updates and clears the problems discovered since the release of version 1.11.5.

## PC code versions.

To obtain all of the new facilities described in this release document the following PC versions are required:

Aesimhei.dll          Version 1.4.0.0 or later
AESWDriver.exe     Version 1.1.3.2 or later
AESW98Driver.exe  Version 1.1.2.2 or later
Aesimhei.h           Dated 10/09/08 or later (See side effects below)

## Minor enhancements in this release.

• This release will assign identify DP_MCL_SR3 to the new SR3I from MCL. (In fact any cctalk device string starting "SR3" - the old SR3 identified itself as "NXS")
• This release will automatically use the new MCL encryption as used in the new Serial Compact Hopper 3.
• Serial Compact Hopper 3 is reported with an LS byte of 4, value DP_MCL_SCH3 *in the above* Aesimhei.h.
• Combi Hopper (SCH3A) is still reported with an LS byte of 3, but this value is now called DP_MCL_SCH3A in the above Aesimhei.h.

## Bugs in version 1.11.5 fixed in this release.

• A fault in the cctalk note acceptor handler meant that all hoppers and coin acceptors would be disabled while the note acceptor was reporting a jam.
• A fault in the cctalk SR5 handler meant that if the main (hopper) path for a coin was changed, while that coin was overridden to the secondary (cashbox) path, future coins would route to the new main (hopper) path rather than to the secondary (cashbox) path.
• A fault in the initialisation code was discovered that could cause very short pulse on the outputs following a reset on power up.
• A significant fault was discovered and fixed in the USB firmware reprogramming code. For more details, see the discussion below.
• A fault in the initialisation code was discovered that could cause very short pulse on the outputs following a reset on power up.
• If a hopper fails to respond to two successive status polls immediately following a payout then Paylink will pay twice as many coins as requested. The overpayment is actually reported as a fault and the system reports the number of coins actually paid.

## Significant Side effects from version 1.11.5

• Older versions of Aesimhei.h equate a Combi Hopper ID, with LS byte **3,** as DP_MCL_SCH3 - i.e. this name is **not** the new Serial Compact Hopper 3.

## Compatibility with 1.11.5

All software in this release can be freely mixed with that in 1.11.5

## Upgrade / Downgrades

Any earlier version of the firmware can be upgraded to this version without any problems.
Downgrading to 1.10.x or 1.9.x will not cause any problems.

### *Reprogramming Problems.*

**All** versions of Paylink prior to release 4.1.10.11 / 3.1.11.6 have a fault in the flash reprogramming code.

## The Fault

During reprogramming of the Paylink unit from the USB link, a single bit can be programmed with the wrong data. The fault occurs in about 1% of re-programming operations and is not detected during the flash reprogramming operation.

## Symptoms of faulty reprogramming.

As the fault is in the reprogramming code, the error symptom is apparent in the newly loaded code, not the previously resident code with the fault.

*Paylink without Kernel (4.1.10.8 and earlier)*
The corruption is detected by the Paylink unit and reported by the programmer and AESWDriver programs as an error. As most of the code in Paylink is never actually run, the chances of a corruption causing a problem are very low. However, any unexpected operation may be due to a corruption and some errors in operation may not be obvious.

*Paylink with Kernel (4.1.10.9 and later)*
The kernel detects the corruption when the application is checksummed before being started and the application is *not* started and the unit goes *directly* into re-programming mode. In this situation, the AES driver program does not show the connection as operational and the windows re-programming utility shows the existing application version as 0.0.0.0.
*Note that this symptom is not expected to be seen with releases 4.1.10.11/3.1.11.6 and later. (see below.)*

## Paylinks Affected

Any Paylinks that has been reprogrammed via the USB port, where the previous loaded code was 4.1.10.10 or earlier are at risk of corrupted flash locations.

The only way to guarantee that a Paylink is running uncorrupted code is to check the Driver / Programmer, or to load version 4.1.10.9 or later.

## Updating problem Paylinks with 3.1.11.6 or later.

When the new version (3.1.11.6 or later) is downloaded to Paylink, the flash is reprogrammed with the flash programmer that is part of the previously loaded code. This means that re-programming a unit that was running old software (pre 4.1.10.11) still has a 1% chance of corrupting the flash.

If a corruption does occur when a unit is reprogrammed with 3.1.11.6 or later, the new Kernel detects it and the Paylink reprogramming mechanism will run again. This time though the new flash reprogramming algorithm is used and will be successful.

The loader program (Windows version 1.0.4.4) has been enhanced to detect a Paylink that has automatically restarted in this way and will automatically repeat the download that has failed. As this repetition will use the newly downloaded correct code, the reprogramming will work this time and the Paylink will remain operational.