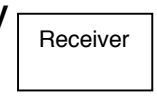
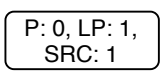
sACN Project Discovery Mechanism

This diagram runs through an example scenario of packets being received to demonstrate how the project sACN receiver mechanism should behave.

Key



The entire receiving program, split between the project Library (what is being created) and the Application code which is utilising the library.



An sACN discovery packet that has been received from the network. 'P' refers to the page of the packet, 'LP' refers to the last expected page and 'src' refers to the sACN source.

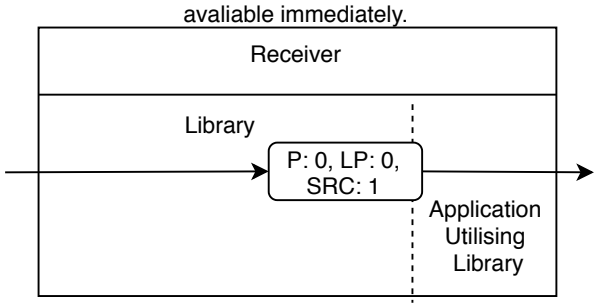
The dotted line shows the seperation between the library and the application code utilising the library. Once a discovered source + universe list has crossed this dotted line it is ready to be used but if it isn't accessed in time it might be removed if it times out.

The arrows show the movement of the packet information, so an arrow coming into the Library represents a packet being received from the network and an arrow moving out of the library represents the packet data being passed up to the application. In this case passed up to the application may mean that the user can access the data but they may not have yet.
No arrow coming from a packet shows that the packet has been stored and is waiting.

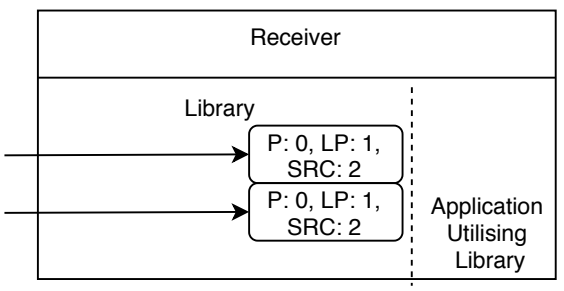
Red indicates that a packet has been deleted.

The scenario below follows a story board style going from left to right and top to bottom.
The number in **bold** indicates the current position in the scenario with the numbers increasing sequentially starting at 1.

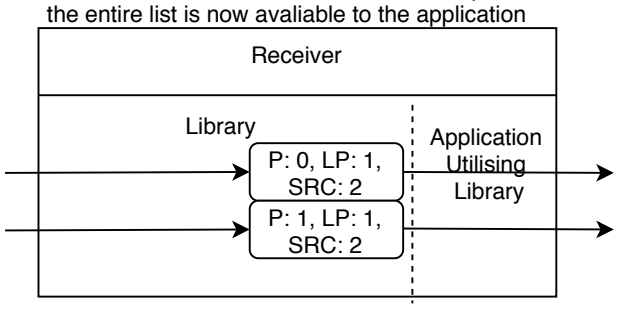
1. A universe discovery packet with a page of 0, an LP of 0, this is already a complete list so is avaliable immediately.



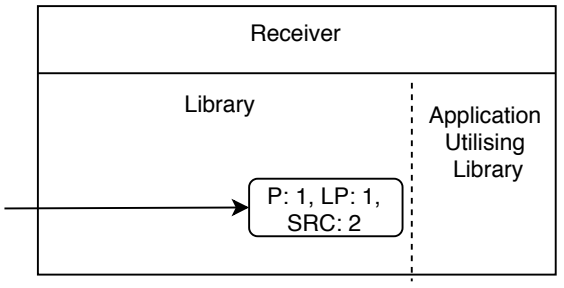
2. The first part of a universe discovery list is received, as it is not complete it waits



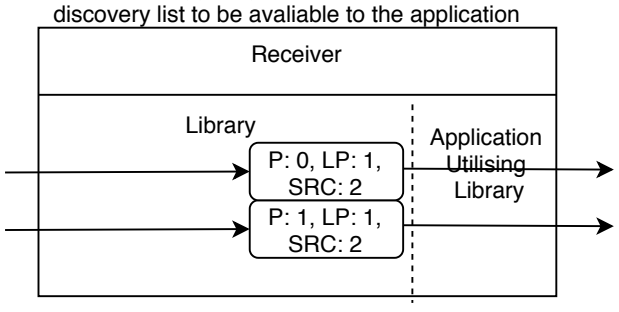
3. The second part of the universe discovery list is received and because the list is now complete the entire list is now avaliable to the application



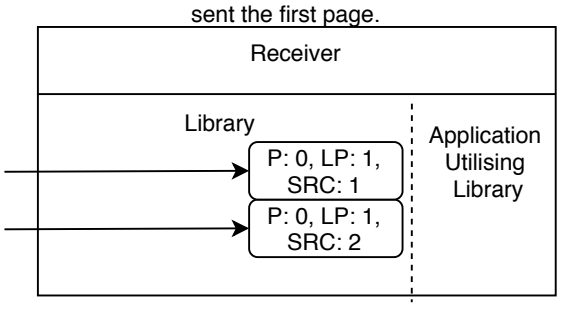
4. Pages can be received out of order, here the second page is received first and waits.



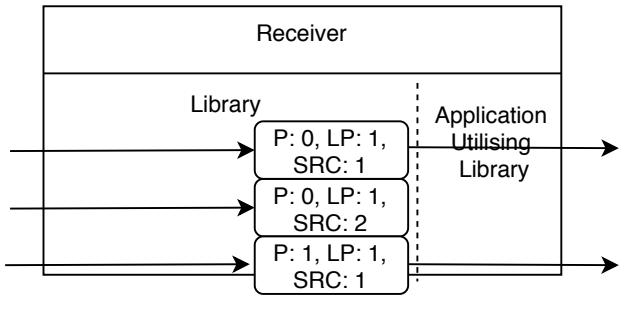
5. The first page is then received completing the list and triggering the complete universe discovery list to be avaliable to the application



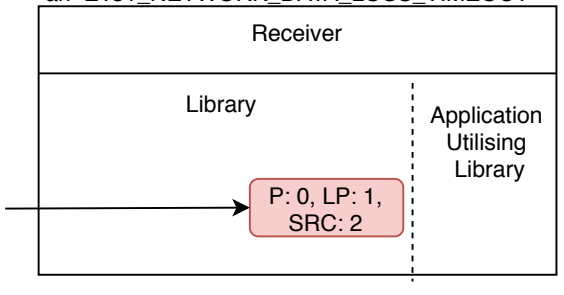
6. Multiple sources can be sending discovery packets simultaneously. Here 2 sources have sent the first page.



7. The last page for the list from source 1 is received and the list is passed up.



8. If a required page isn't received eventually the waiting page will timeout after waiting for an E131_NETWORK_DATA_LOSS_TIMEOUT



The timeouts also apply to discovered sources, if data is received from a source within an E131_NETWORK_DATA_LOSS_TIMEOUT then the discovered source is timed out and should be removed from the list of discovered sources.