



Fig.3 - Content of one HRPT Frame

Words

The decoder is now able to recognise the different bits, but it is still unknown which 10 bits form a digit (pixel). Transmission is a continuous stream of bits. This problem is solved by adding some extra so-called "synchronisation words", words which are always the same. With HRPT, 60 bits (i.e. 6 words) are added. The decoder uses these words to determine which bit is the first of each byte, and which is the last.

Lines and Channels

It is next necessary to determine which word is the first in a line, and which word belongs to which channel. This problem is solved by putting all words in a so-called "frame". The first 6 words of the frame are the synchronisation words discussed in the previous section (note that a "frame" is not something added to the transmitted signal; it is actually just a piece of information). More words are then added, and at a certain place the word corresponding with the first pixel of channel 1 can be expected. (**Fig.3**)

Word Number	Meaning
1 to 6	sync. words
7 to 750	Sat ID, calibration, time etc.
751	channel 1, pixel 1
762	channel 2, pixel 1
753	channel 3, pixel 1
754	channel 4, pixel 1
755	channel 5, pixel 1
756	channel 1, pixel 2
...	...
10,985	channel 5, pixel 2047
10,986	channel 1, pixel 2048
10,987	channel 2, pixel 2048
10,988	channel 3, pixel 2048
10,989	channel 4, pixel 2048
10,990	channel 5, pixel 2048
10991 to 11090	100 aux. sync. words

Together with this information it is possible to reconstruct the pixels, the lines; in other words the picture.

Structure of one HRPT frame