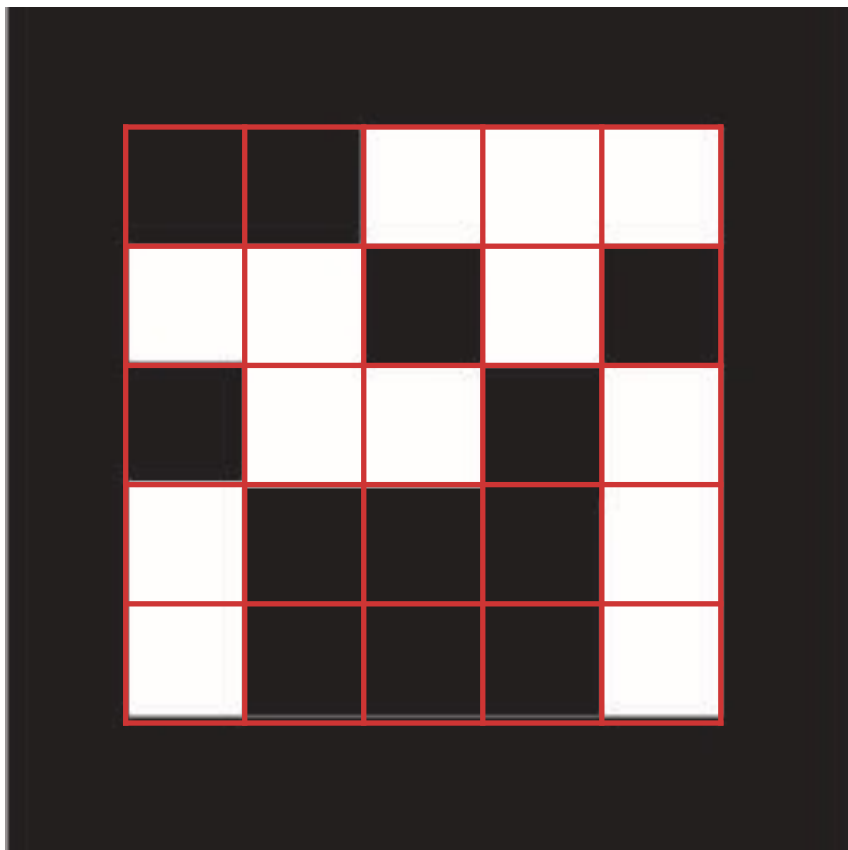


Marker Description

This slide explains how the OpenCV / ARTag version represents the binary code of a marker. Markers are described in Marker.h/.cpp.



Marker is divided into a grid of 5x5 cells.

black cell = value 0

white cell = value 1

The marker definition for the marker on the left is:

```
int marker[5][4] = {  
    {0, 0, 1, 1, 1},  
    {1, 1, 0, 1, 0},  
    {0, 1, 1, 0, 1},  
    {1, 0, 0, 0, 1}}
```

Note, only four lines are represented. The last increases the robustness.

Marker Description

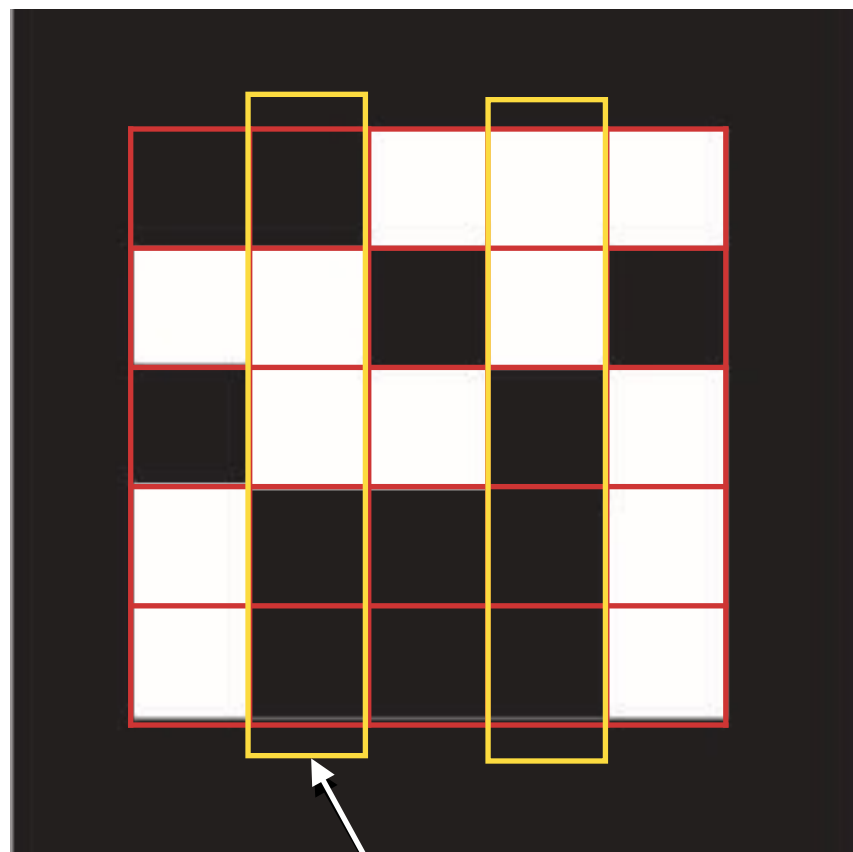
This slide explains how the OpenCV / ARTag version represents the binary code of a marker. Markers are described in Marker.h/.cpp.

The binary code of a marker is generated using the binary code in the first and third column.

```
for (int y=0;y<5;y++)  
{  
    val<<=1;  
    if ( bits.at<uchar>(y,1)) val|=1;  
    val<<=1;  
    if ( bits.at<uchar>(y,3)) val|=1;  
}
```

128	64	32	16	8	4	2	1
						<<0	1

An integer string - the bits - are filled up from the left with the values from the 1 and third column.



To describe the binary code!