recognition algorithm 1:

M11({ Torpedo }, { Shoal of fish }, { Unknown object }) = (0.7, 0.2, 0.1)

M12({ Torpedo }, { Shoal of fish }, { Unknown object }) = (0.6, 0.2, 0.2)

recognition algorithm 2:

M21({ Torpedo }, { Shoal of fish }, { Submarine }, { Unknown object }) = (0.5, 0.2, 0.1, 0.2)

M22({ Torpedo }, { Shoal of fish }, { Submarine }, { Unknown object }) =(0.6, 0.2, 0.1, 0.1)

recognition algorithm 3:

M31({ Torpedo }, { Unknown object }) = (0.6, 0.4)

M32({ Torpedo }, { Unknown object }) = (0.4, 0.6)

Table II is comparison of the fusion probability assignment, it fusing the probability assignment of the three different recognition algorithm for the object in image, and the image is enhanced thought the two different enhancements.

TABLE II The fusion for multiple sensor, in multiple measuring cycles

		M(Torpedo)	M(Shoal of fish)	M(Sub marine)	M(Unknown object)
recognition algorithm 1	Image enhancement 1	0.7	0.2	0	0.1
	Image enhancement 2	0.6	0.2	0	0.2
The two fusion for recognition algorithm 1		0.8378	0.1351	0	0.0270
recognition algorithm 2	Image enhancement 1	0.5	0.2	0.1	0.2
	Image enhancement 2	0.6	0.2	0.1	0.1
The two fusion for recognition algorithm 2		0.7460	0.1587	0.0635	0.0270
recognition algorithm 3	Image enhancement 1	0.6	0	0	0.4
	Image enhancement 2	0.4	0	0	0.6
The two fusion for recognition algorithm3		0.7600	0	0	0.2400
The three fusion		0.96732	0.0131	0.00058295	0.00024815

It can be seen from the table that credibility of recognition algorithm 1 (2 or 3) to enhance image recognition algorithm is higher than of distribution ratio 1 (2 or 3) of any two consecutive recognition. The probability assignment of the fusion for the three different recognition algorithm is higher than the probability assignment of anyone recognition algorithm. In addition, it can also be seen that The target is most likely to M(torpedo) relative to M(Shoal of fish), M(Submarine) and M(Unknown object). And it has the smallest possibility that the target is unidentified objects.

In the image recognition, data fusion algorithm can also be used. We can fuse posteriori probability assignment values. These values are obtained by different recognition algorithms. The fusion method based on DS evidence theory. It can get better recognition effect. The extracted characteristics by single recognition algorithm can not be a complete description of a target, Because of its recognition algorithm defects. So, you can not make full use of goal-related information. It affects the validity and reliability of the feature set. In this case, the target recognition system performance is not satisfactory. The method in this paper can be more complete description of the target, Because we have many different identification image and several different enhancements, and independent, complementary to the feature vector is extracted, then we have adopted a comprehensive treatment technology. Simulations show that this method is beneficial to improve the probability of correct identification, to reduce the error probability.

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