

Can the MHC distinguish between activity from two bearings sharing the same housing ?

Perhaps confusingly the answer is Yes and No! Take for example the case of letter sorting machinery where a single MHC measurement on a bed-plate is used to simultaneously confirm that the bearings on tens of spindles bolted to the bed-plate are all in good condition. Even when only one spindle bearing has a fault it can be detected by this single measurement. However if you want you can position the sensor very close to an individual bearing (in its near field) and this boosts the fraction of the overall signal coming from the bearing of interest. On machinery in general where two bearings are close together you can often localise which bearing has the problem by comparing readings when the sensor is directly positioned on one then the other (however this may not be possible when two bearings are back to back).

The situation is analogous to when you are at a party; you hear the general indecipherable noise of multiple simultaneous conversations in a room but it is very easy to detect if anyone coughs. Similarly if you stand sufficiently close to someone it's possible to concentrate on what they are saying with less of an effect from the others.