KEYS:

- ask which aspect will I concentrate on?

- collision risk assesument accuracy

- ship encounter operation (situation awareness)

- risk assessment methodology

- COLREGs

- Kalman filter is essntially a mean-square error estimator, and it has much in common with the *chi-square*. The *chi-square* merit function is a maximum likelihood function. Kalman filter is also known as a recursiv least squares (RLS) filter.

Questions that may appear

1. Tell me more about yourself?

2. Do you have wife?

3. Why not and how to map those knots to robots

4. It seems you have a traditional maritime history

5. Why would you like to apply for this position?

What makes me the right candidate for this PhD project?

Chapter 1

Kalman filter

The filter is constructed as a mean squared error minimiser, and also relates to maximum likelihood statistics. Wiener's solution uses both thee autocorrelation and the crosscorrelation of the received signal with the original data to derive an impulse response for the filter. Instead, Kalman uses state space which can hence be applied to a wide range of applications. Kalman enable the filter to be used as either a smoother, a filter or a predictor.

1.1 State space derivation