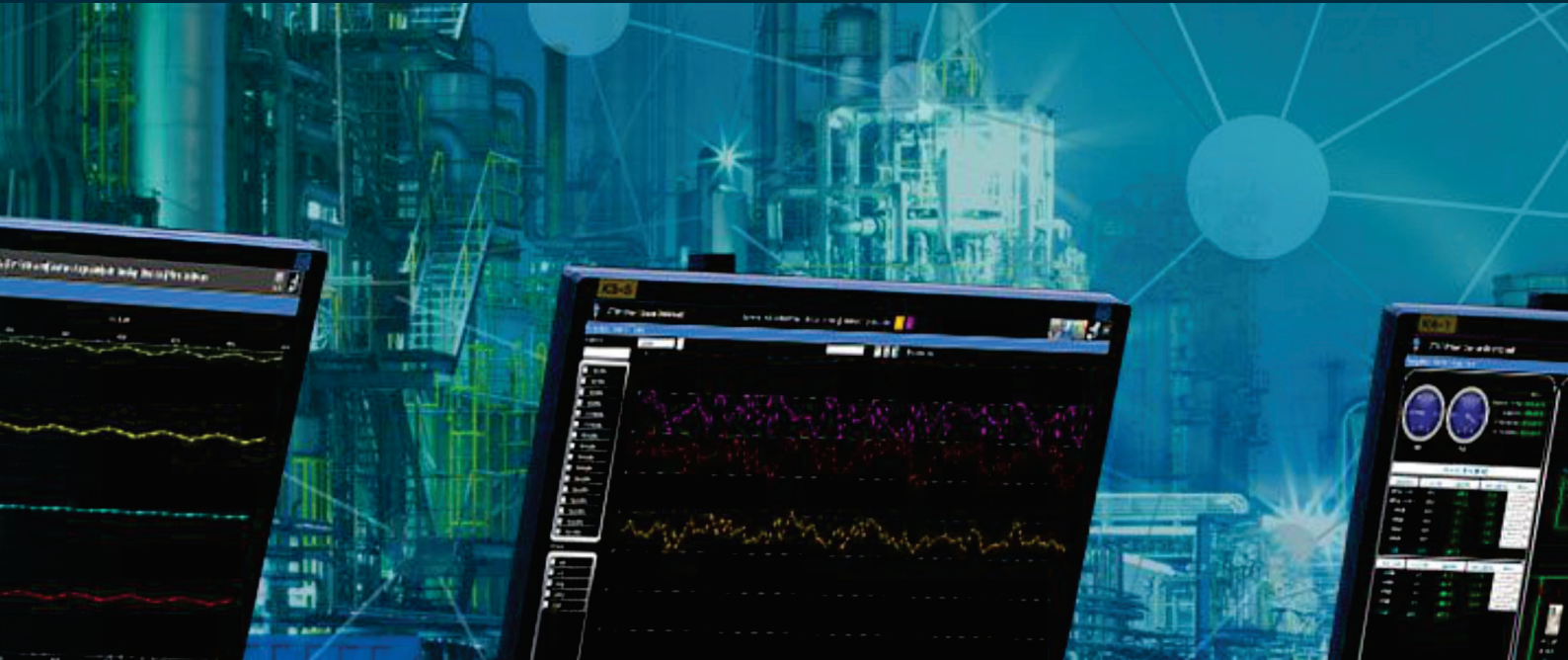


K-POWER

DYNAMIC LOAD PREDICTION (DLP)



KONGSBERG



The Dynamic Load Prediction (DLP) function is an intelligent add-on feature to the K-Power Power Management System (PMS) that can manage both conventional marine power plants for merchant vessels, and complex power generation systems for offshore vessels.

FEATURES

The DLP continuously measures the dynamic set points and actual load from heavy consumers and predicts future load values for the consumers. The predicted load values are fed forward to the PMS to achieve a more stable frequency on the switchboard and reducing the number of required generators connected.

DLP sends the change in load or setpoint into the KM Enhanced Compensated Droop load sharing system and to the jet assist system for the turbo. This allows the PMS to run with fewer engines online and still achieve stable frequency from the generator.

FUNCTIONS

A change of load caused by heavy consumers will be predicted and fed forward to generator controllers by the DLP.

By reducing frequency and voltage variations, the number of running engines can be reduced without the risk of blackout. The Dynamic Load Prediction system will continuously measure the dynamic set points and actual load from heavy consumers and calculate the feed forward load expression. The prediction of feed forward can be from the following factors:

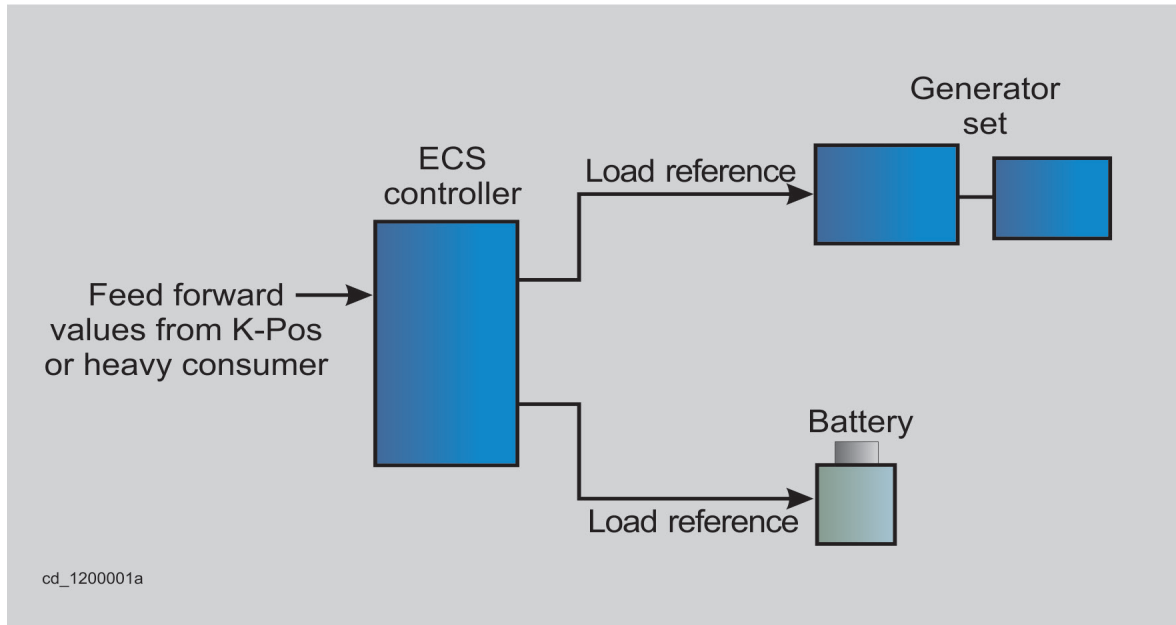
- Speed / acceleration change in DP
- Diesel shutdown
- Breaker tripping
- Load shedding system
- Setpoint change on dynamic loads.

TECHNICAL SPECIFICATIONS

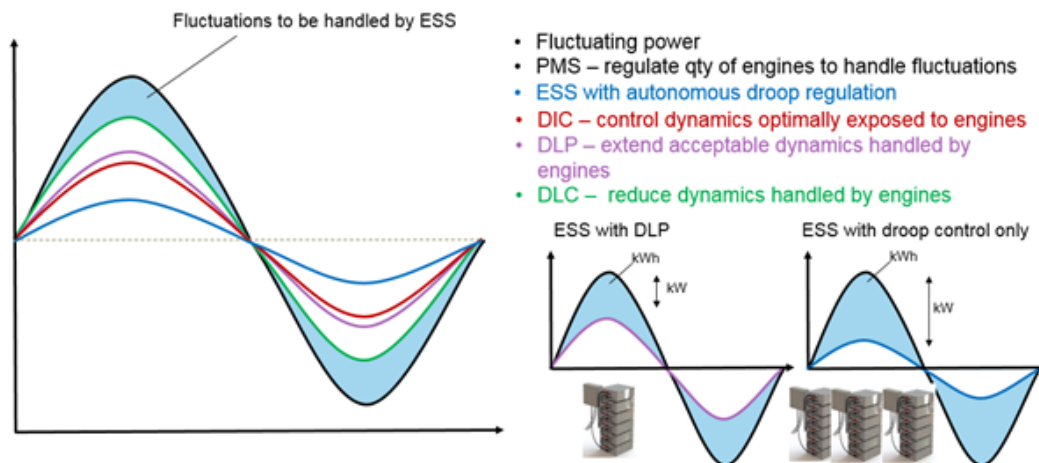
Requirements

K-Chief 700 PMS.

This figure shows the feed-forward values distributed to the generator set and battery.



Load fluctuations handled by DLP combined with Energy Storage System (ESS) control:



Specifications subject to change without any further notice.