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## Conceptual development of K-DEMO, highlighting maintenance and support details of in-vessel components

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The Korean fusion demonstration reactor (K-DEMO) has progressed through early concept definition activities to establish machine parameters, an operating point and the definition of the major core components. A key part of the conceptual development activities centered on the in-vessel components and the concept definition of the blanket/shield system, its segmentation and support arrangement. These systems have a major influence in defining the overall K-DEMO configuration and planned maintenance scheme. Earlier concept details of in-vessel systems has been updated with the addition of planned heating and current drive details, added blanket penetrations and the addition of some of the external heating systems located outside of the device core. Further definition of the blankets and support systems also led us to revisit the structural analysis of the in-vessel system design performed earlier [1, 2]. With in-vessel systems further developed, an initial assessment of a remote maintenance approach to remove all in-vessel components through the vertical ports also was made. The results of this activity along with an overview of the latest K-DEMO general arrangement will be presented.

### References

- [1] P. Titus, et.al, "Disruption Analysis of the Proposed K-DEMO Blanket support Structure", 21st Topical Meeting on the Technology of Fusion "Energy, 2014, Anaheim, CA
- [2] P. Titus, et.al, "Structural Assessments of the K-DEMO Blanket Modules", 29th Symposium of Fusion Technology, September 2016, Prague, Czech Republic

### Eligible for student paper award?

No

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