



The implementation and operation of the 4th version of KSTAR Fast Interlock System

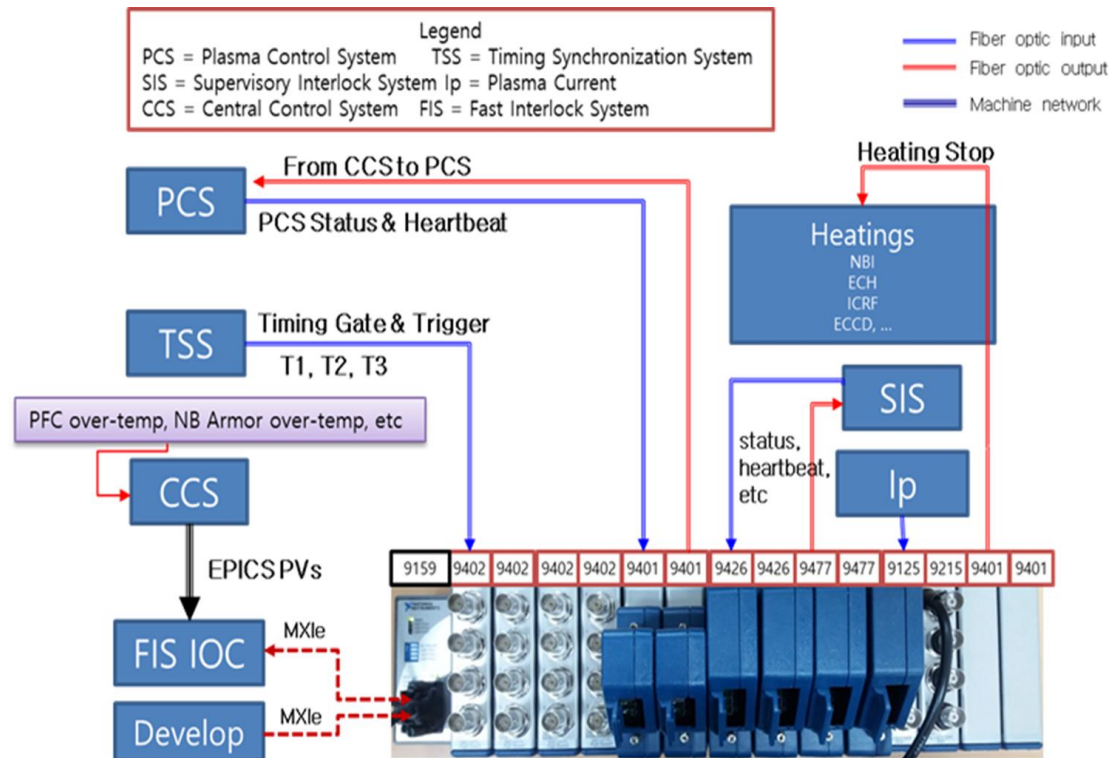
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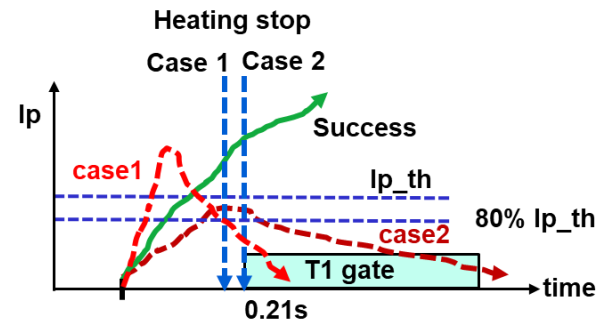
Key Technology

- 4th version of Fast Interlock System using c-RIO was implemented and operated in 2018 operation.
- Event counter in FPGA works perfectly and useful to find out fault sources.

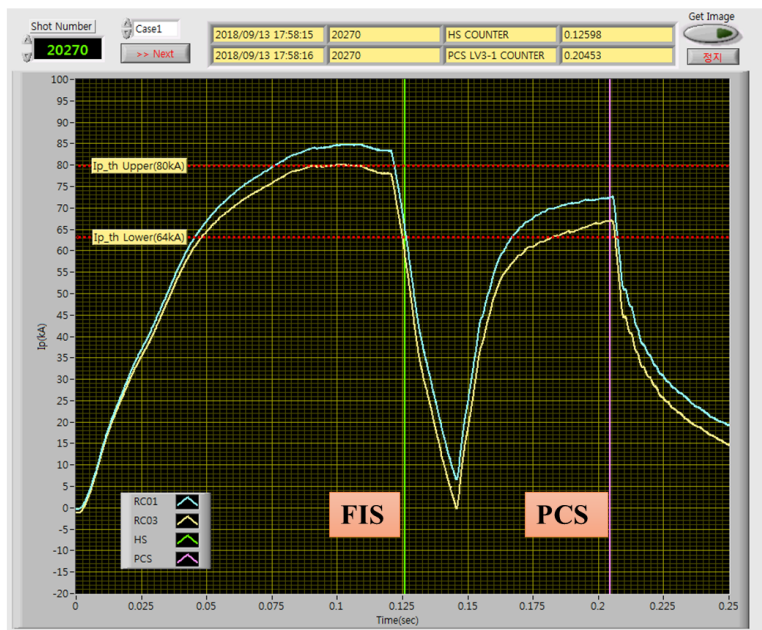


Ip protection during plasma start-up

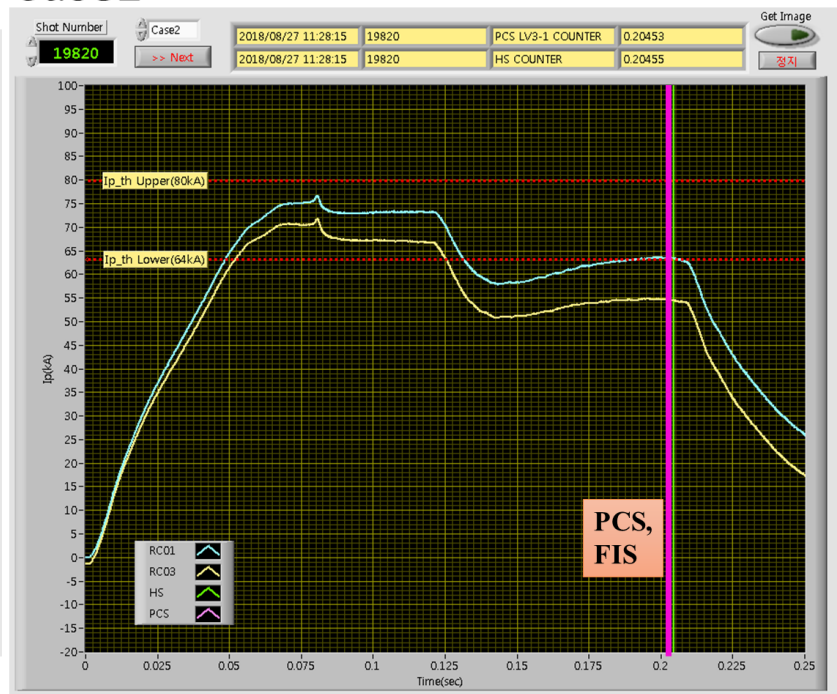
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Case1



Case2



Ip protection examples

Conclusion

- 4th version of KSTAR FIS worked without any problem during 2018 operation.
- Using FPGA event counter logic, FIS performance evaluation was done.
- Event counter was very useful to specify the error/fault source.
- The level of Ip threshold should be reviewed and another protection logics can be added for the FIS upgrade.