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# Discrete event dynamic system

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In control engineering, a **discrete-event dynamic system (DEDS)** is a discrete-state, event-driven system of which the state evolution depends entirely on the occurrence of asynchronous discrete events over time. Although similar to continuous-variable dynamic systems (CVDS), DEDS consists solely of discrete state spaces and event-driven state transition mechanisms.

Topics in DEDS include:

- Automata theory
- Supervisory control theory
- Petri net theory
- Discrete event system specification
- Boolean differential calculus
- Markov chain
- Queueing theory
- Discrete-event simulation
- Concurrent estimation

## References

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- "IEEE CSS Technical Committee on Discrete Event Systems" (<https://ieeecss.org/tc/discrete-event-systems>).
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  - Kumar, Ratnesh; Garg, Vijay K. (1995). *Modeling and Control of Logical Discrete Event Systems*. Springer. ISBN 978-0-7923-9538-6.
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