The Simplex Mode in SpW Technology

Eugenue Yablokov, kabalenator@gmail.com

Presenter: Liudmila Onishchenko
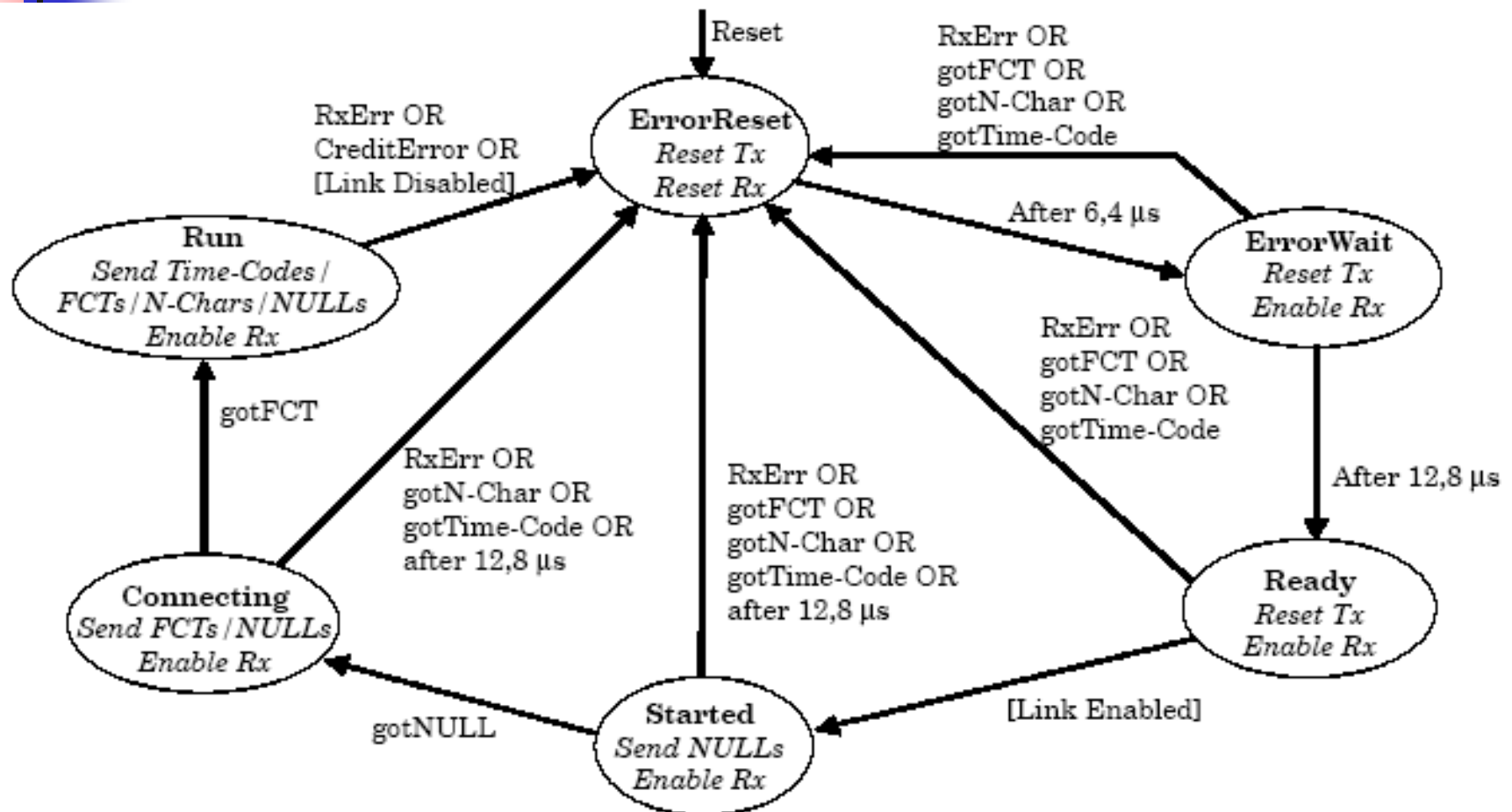
Saint-Petersburg University of Aerospace Instrumentation
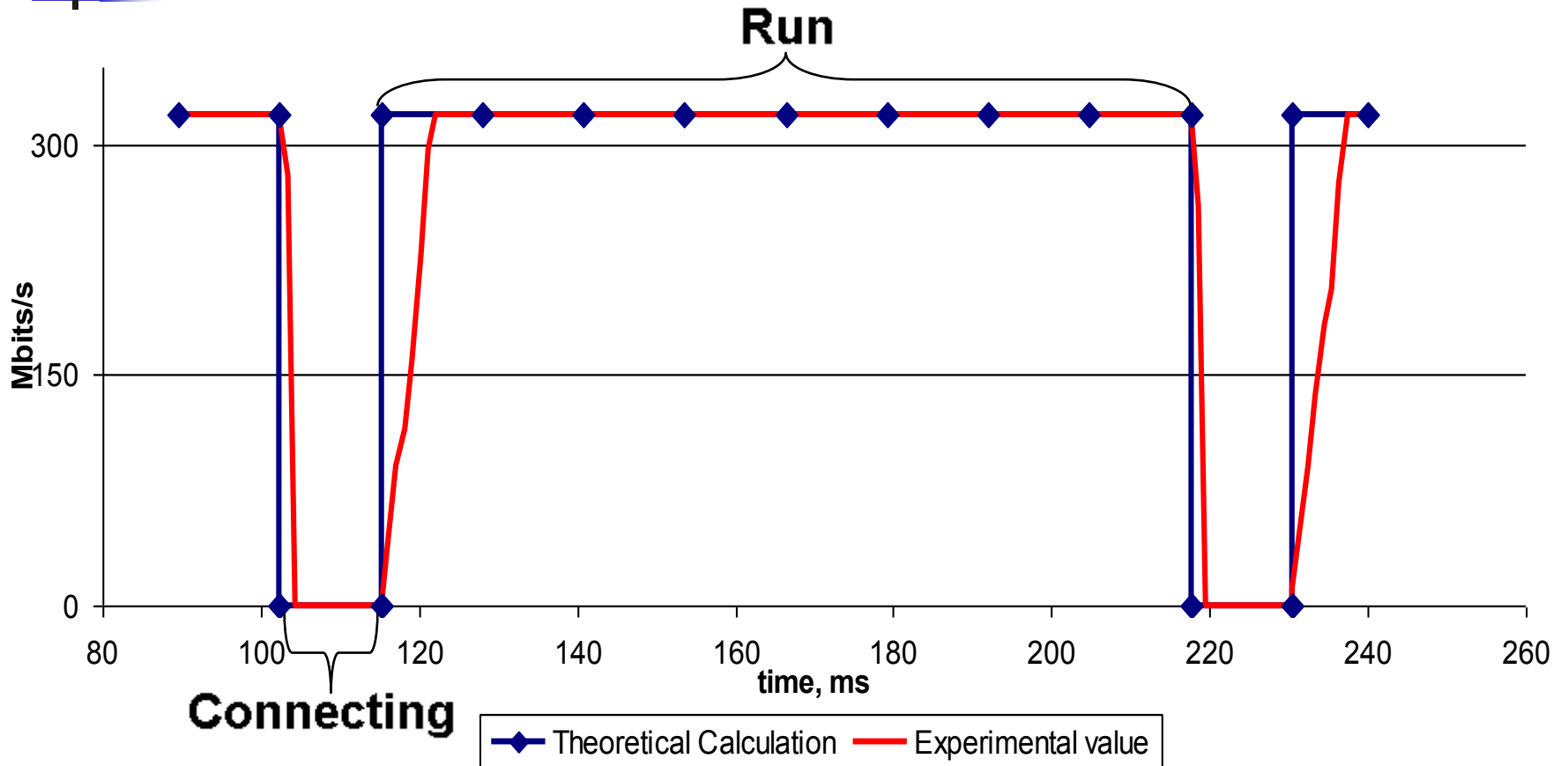*Saint-Petersburg, Russia*

Simplex Mode

- Simplex mode is developed for one-side transmitting or receiving data
- Simplex mode reduces the number of interconnection cable wires
- Simplex mode reduces the number of gates, weight and size of the block
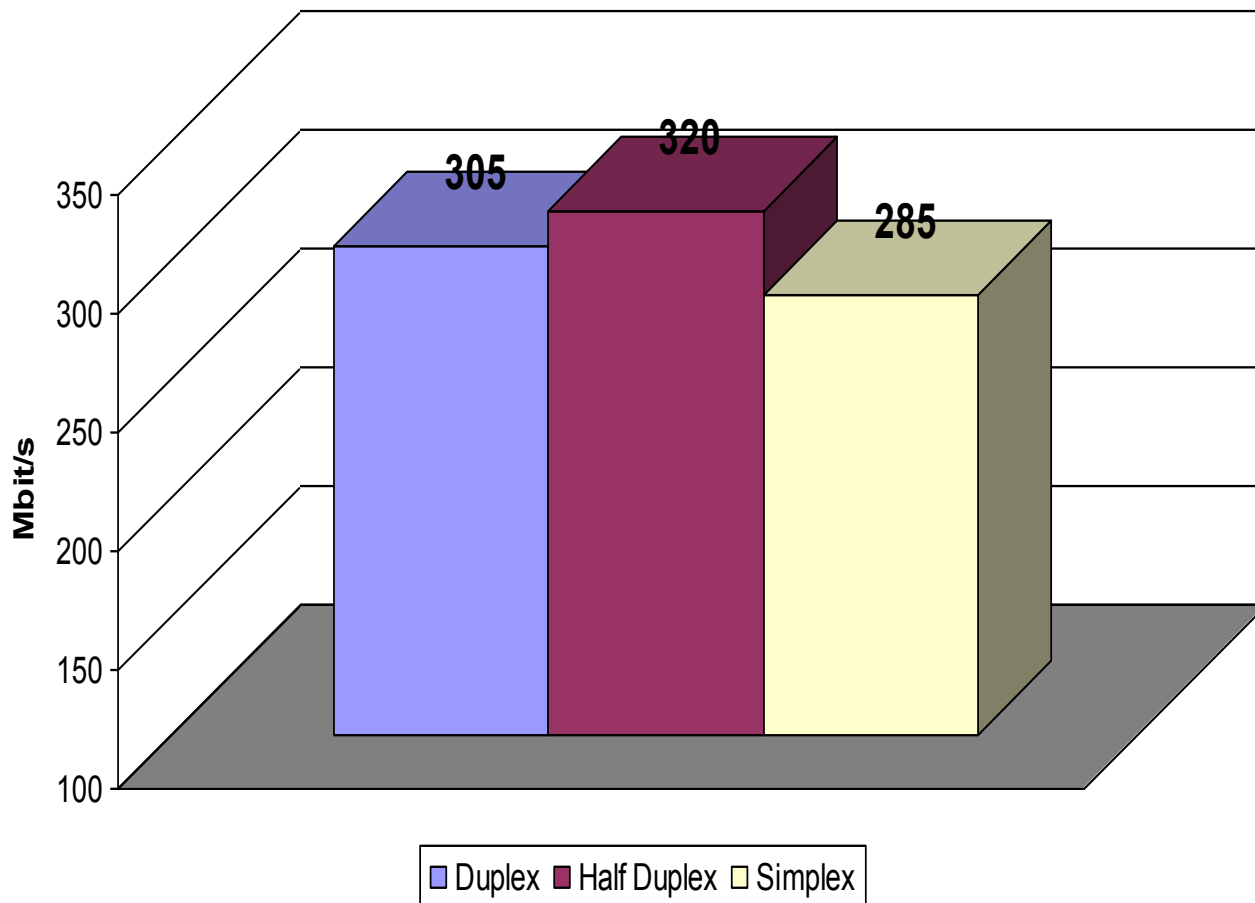
State Machine SpaceWire (Modified)
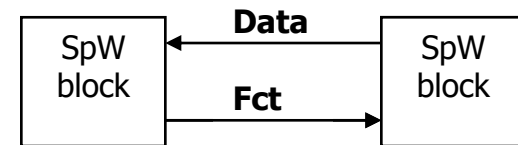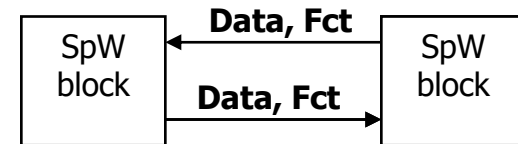
Traffic capacity in simplex mode

Traffic capacity

Half Duplex

SpW block ← **Data** ← SpW block
SpW block → **Fct** → SpW block

Duplex

SpW block ← **Data, Fct** ← SpW block
SpW block → **Data, Fct** → SpW block

Simplex

SpW block ← **Data** ← SpW block

Chart (Mbit/s):
- Duplex: 305
- Half Duplex: 320
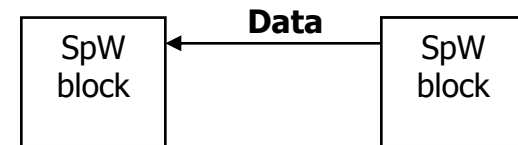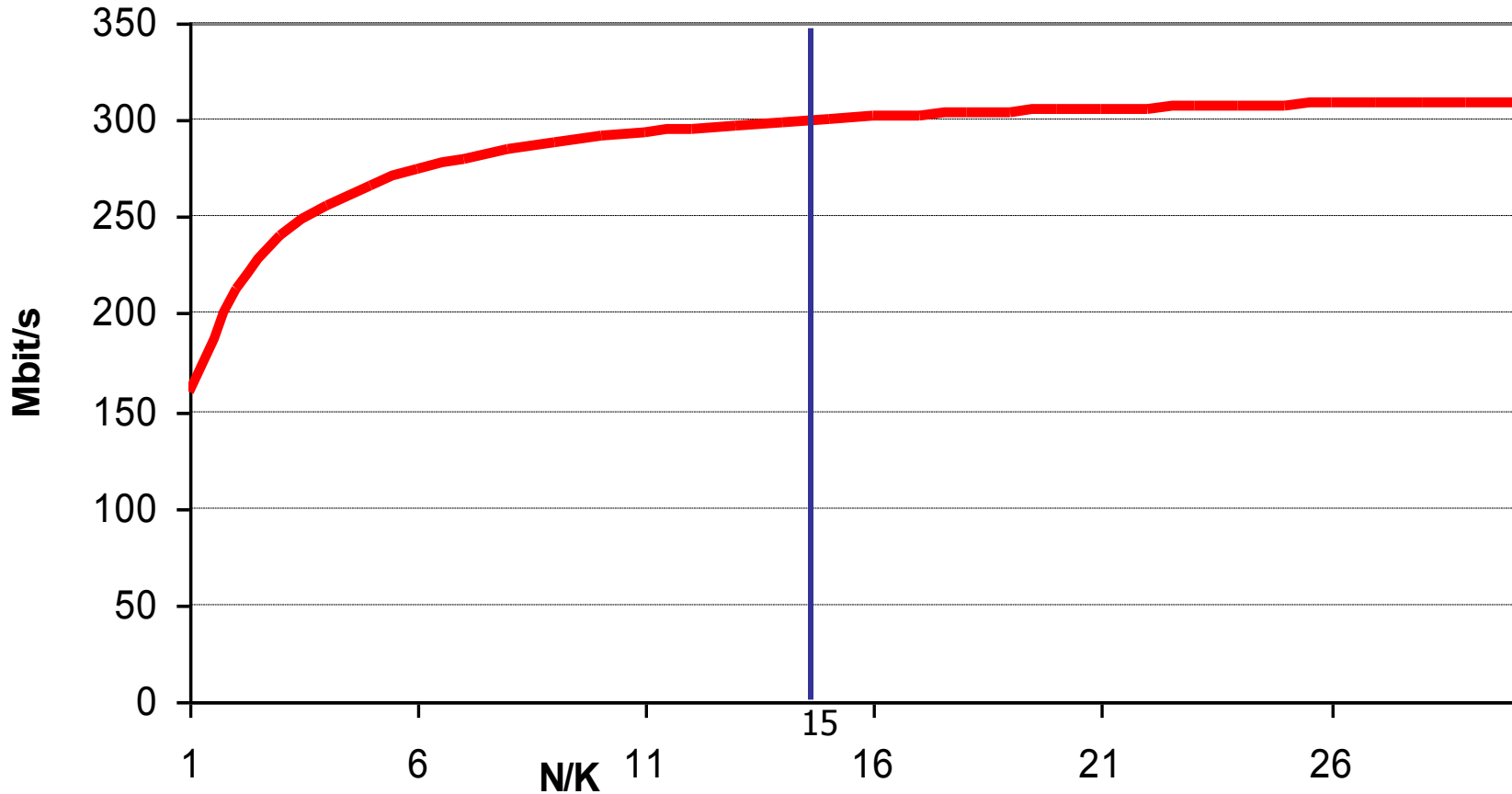- Simplex: 285

Legend: ☐ Duplex ■ Half Duplex ☐ Simplex
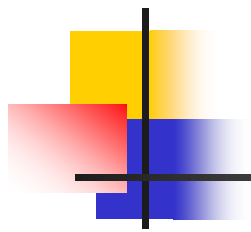
Setting Parameters N and K
(N – time in Run state, K – time in Connecting State)

Conclusion

- Reduced number of symbols (No credit symbols)

- Low power design

- Little modifications in SpaceWire standard

Thank you