Novel Real Time Scheduler

VTIP 18-005: "CURT: A Scheduling Algorithm for Unlicensed LTE/Wi-Fi Coexistence"

THE CHALLENGE

Scheduling bandwidth for multiple cell phone users is presently accomplished almost on an arbitrary basis using a predefined algorithms developed to maximize throughput. Since the scheduling frames are updated every 1 ms, this approach has made it virtually impossible to allocate bandwidth in a real-time, on-demand basis, to achieve best quality-of-service for all users within the cell.

OUR SOLUTION

Utilizing newly developed computer architectures that can perform massive parallel processing tasks within the required timeframe, Virginia Tech researchers have developed a technique that promises to solve the problem in a way that can be implemented in every cell tower, greatly increasing efficiencies and performance of data transmission. Technology has potential to be applicable to all cell phones and wireless devices.
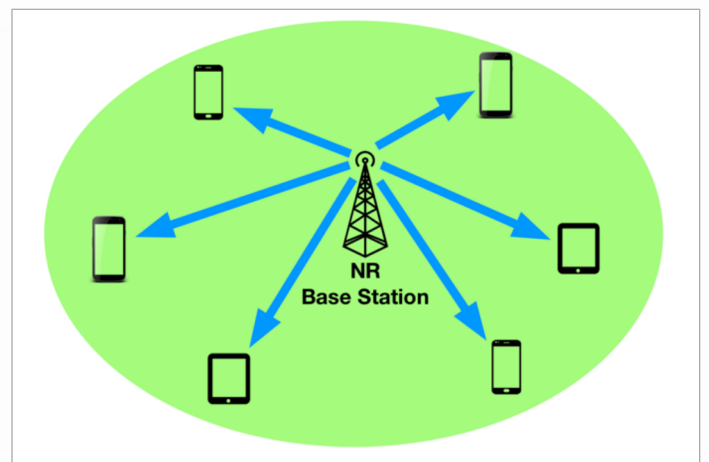
Possible applications include:

- Cellular systems
- IoT applications
- Shared bandwidths systems
- 5G and beyond

https://devblogs.nvidia.com/gpu-based-100-%C2%B5s-schedulingr-5g-nr/

Image of a GPU computing processor.

Downlink of an NR cell.

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