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Challenges for a data-driven society

The IEEE 1906.1 Standard: Nanocommunication as a New Source of Data

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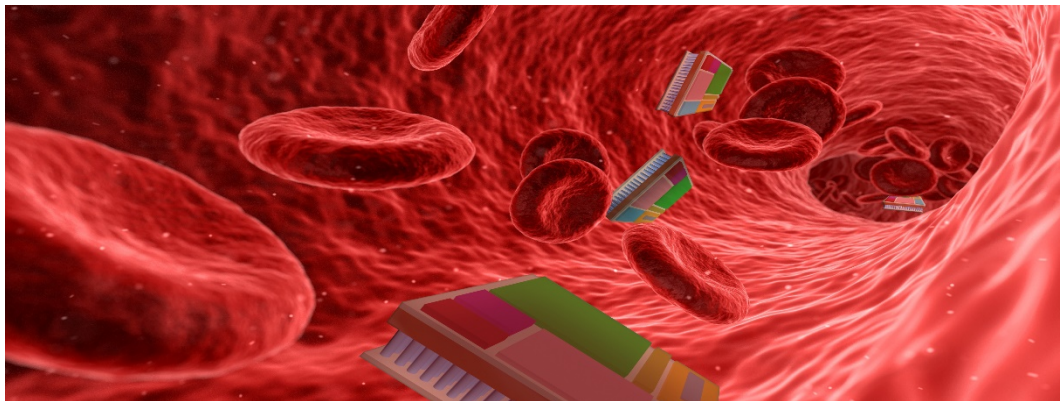
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NANOCOMMUNICATIONS: NEW SOURCE OF DATA

- Novel **nanodevices** are being developed:
 - 1 to 100 nm in size
 - Extremely **limited resources** (processor, memory and energy available)
 - Use of electromagnetic waves to communicate (up to **THz band**).
 - Short communication range  High number of (networked) nanodevices
- Nanodevices will enable unforeseen applications



Nanodevices
flowing through
the bloodstream



IEEE 1906.1 STANDARD

- What does IEEE 1906.1 provide?
 - A **common framework** for researchers.
 - Different parameters and metrics for nanocommunications are rigorously defined.
- Open issues on EM nanocommunications
 - More detailed **definition of nanoscale EM devices**
 - Reference **energy model**
 - **Sensitivity** thresholds
 - Common **communication techniques** (media access control, addressing schemes, flow control, error detection)