



# Generative Communication by Learned Compression and Generative AI

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## Grand Challenge and Goal:

■ We try to develop “generative communication” framework by integrating deep learning-based data compression (called “learned compression”) and generative AI to evolve next generation communication

## Summary:

- **Basic Research:** develops core technologies
  - (1) learned compression: develops efficient, lightweight and low power learned compression of multimodal information sources
  - (2) network-specific generative AI: develops AI-based content generation constrained by semantic quality measures
  - (3) system implementation: supports system issues such as protocol design, adaptive rate control, and hierarchical agent architecture
  - (4) field experiments: verify effectiveness of generative communication through prototype implementation
- **Advanced Research:** explores deployment and standardization

## Social Impact:

- **New communication styles:** semantic communication, predictive low-latency communication, highly immersive communication
- **Social contributions:** safety and security, infrastructure monitoring, remote collaboration, education contents

