



# MILITARY UNIVERSITY OF TECHNOLOGY

Communications Systems Institute

## Polish Tactical Data Exchange System

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# Report Documentation Page

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## *Organization of Presentation*

- Short characteristic of the system
- Construction and functionality remarks
- Concept of database replication
- Summary



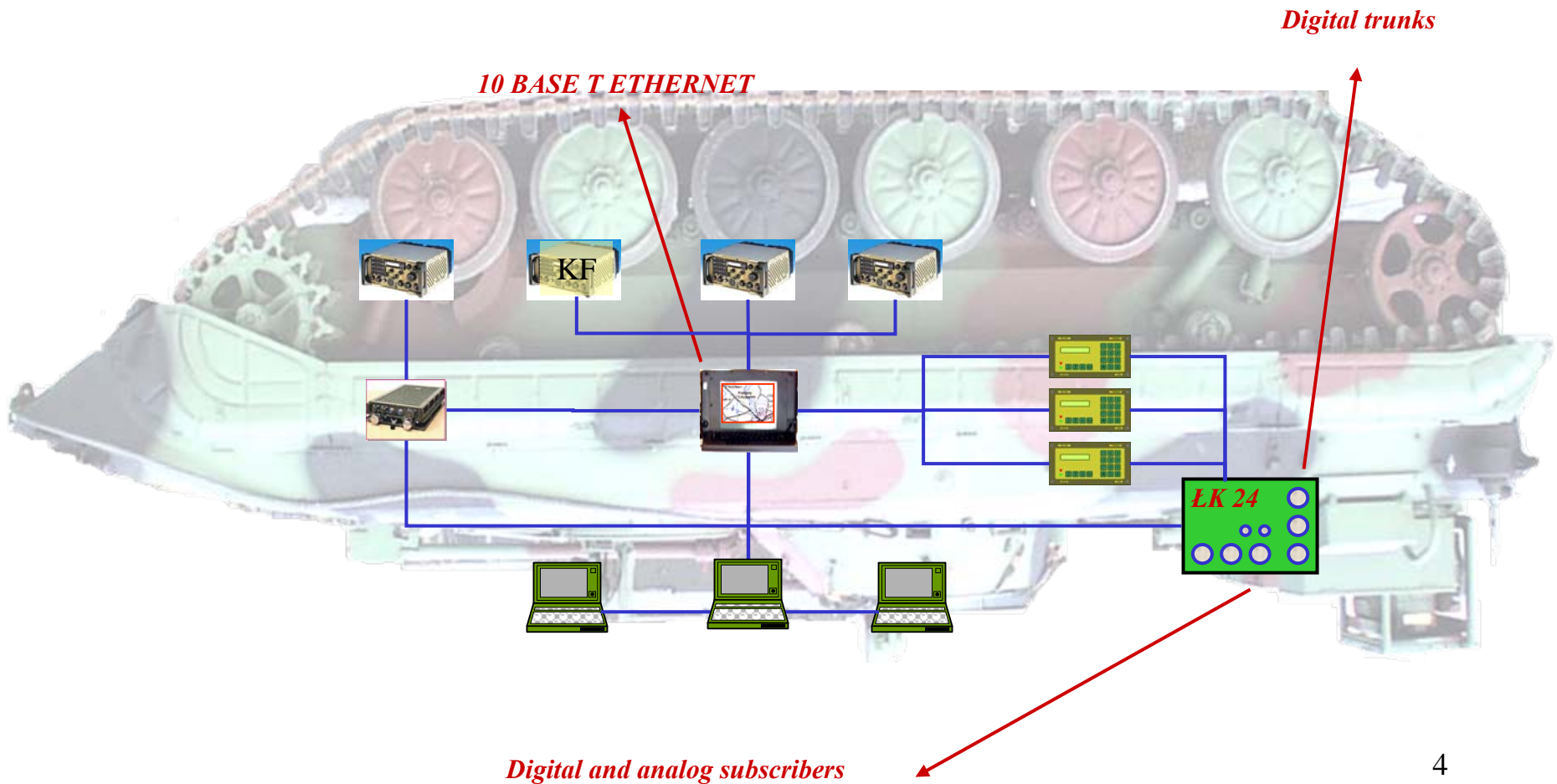
# Wide Area Network for Operational Data Exchange (WANODE)

- Integration of all communications media for automated data exchange (WCS, PSN, Combat Radio, SCRAS, MCRAS);
- Mobile nodes and subscriber equipment for full mobility;
- Automated management and maintenance;
- Internet services gateways (e-mail);
- Both packet & message switching;
- Security & access rights management;
- User identification;
- ADAT P-3 and combat formats  
according to STANAG 2014  
for interoperability.

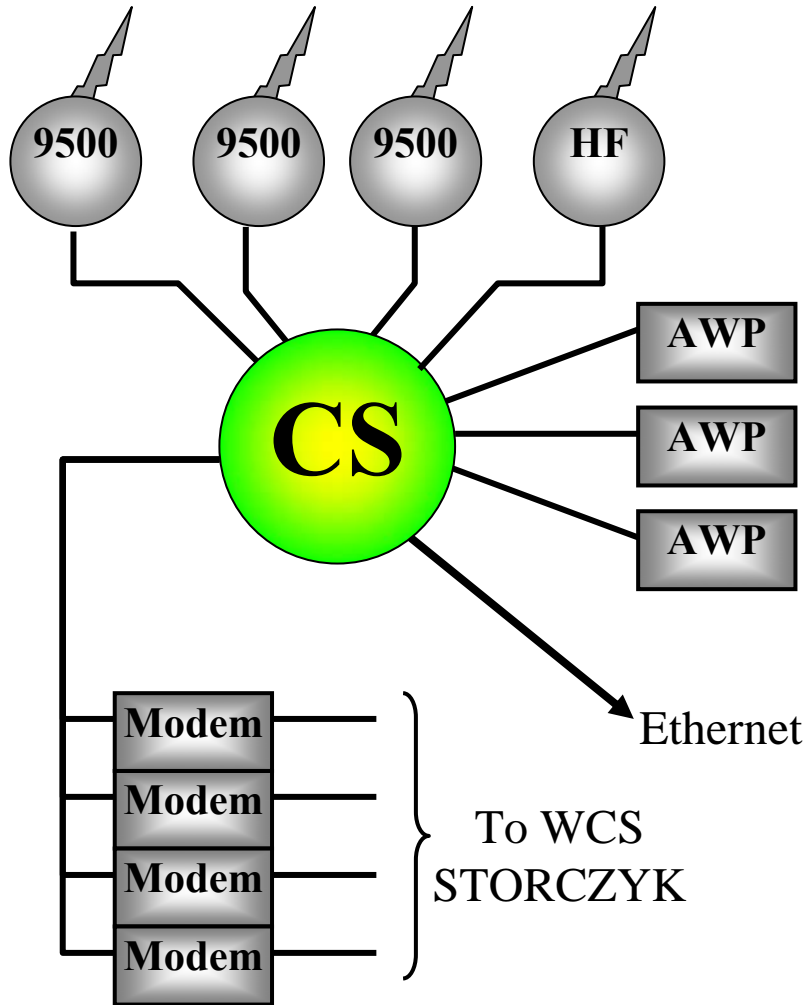




# WANODE Automated Command Vehicle



# WANODE Nodes

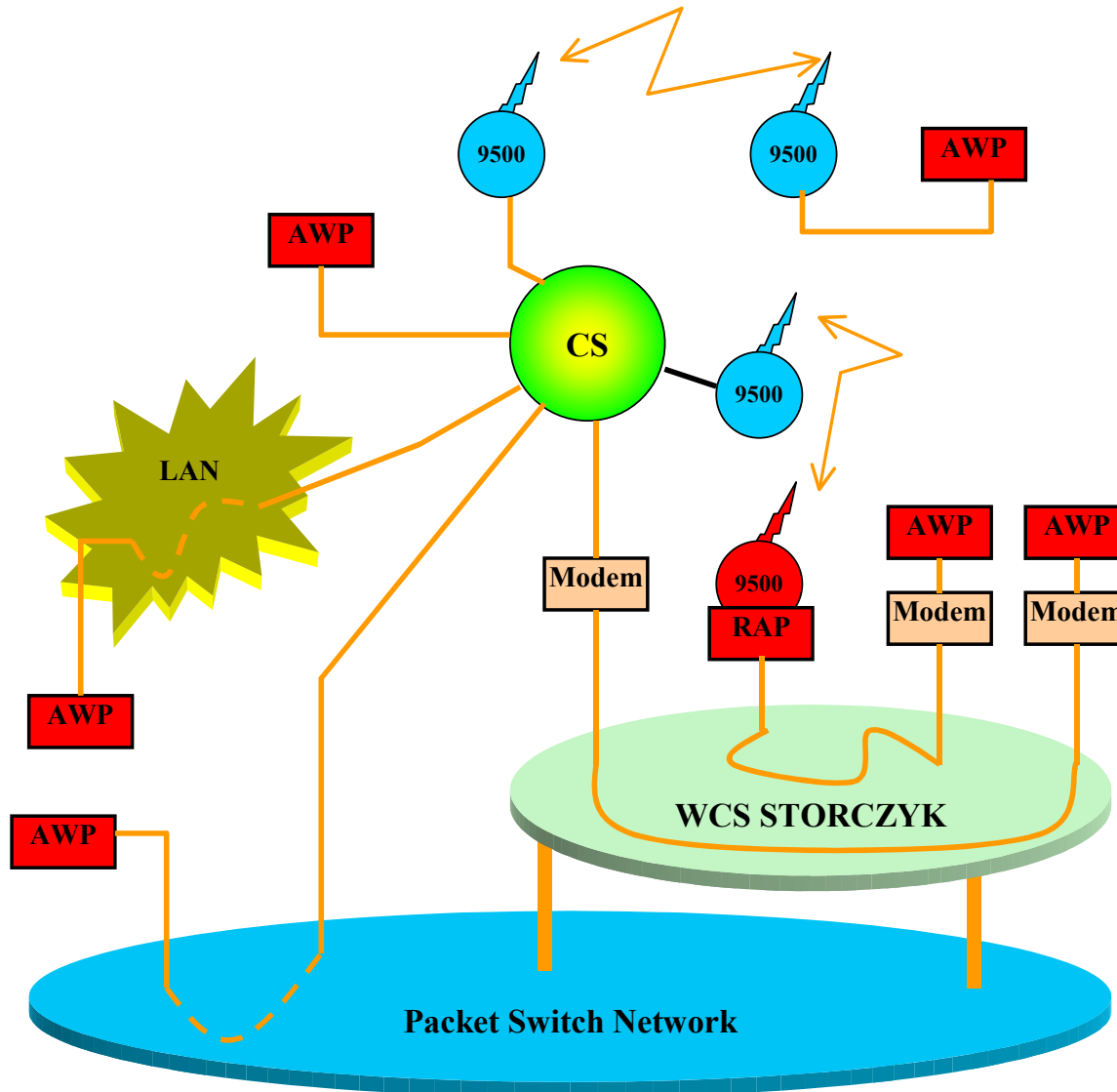


## Communication Server (CS) main tasks

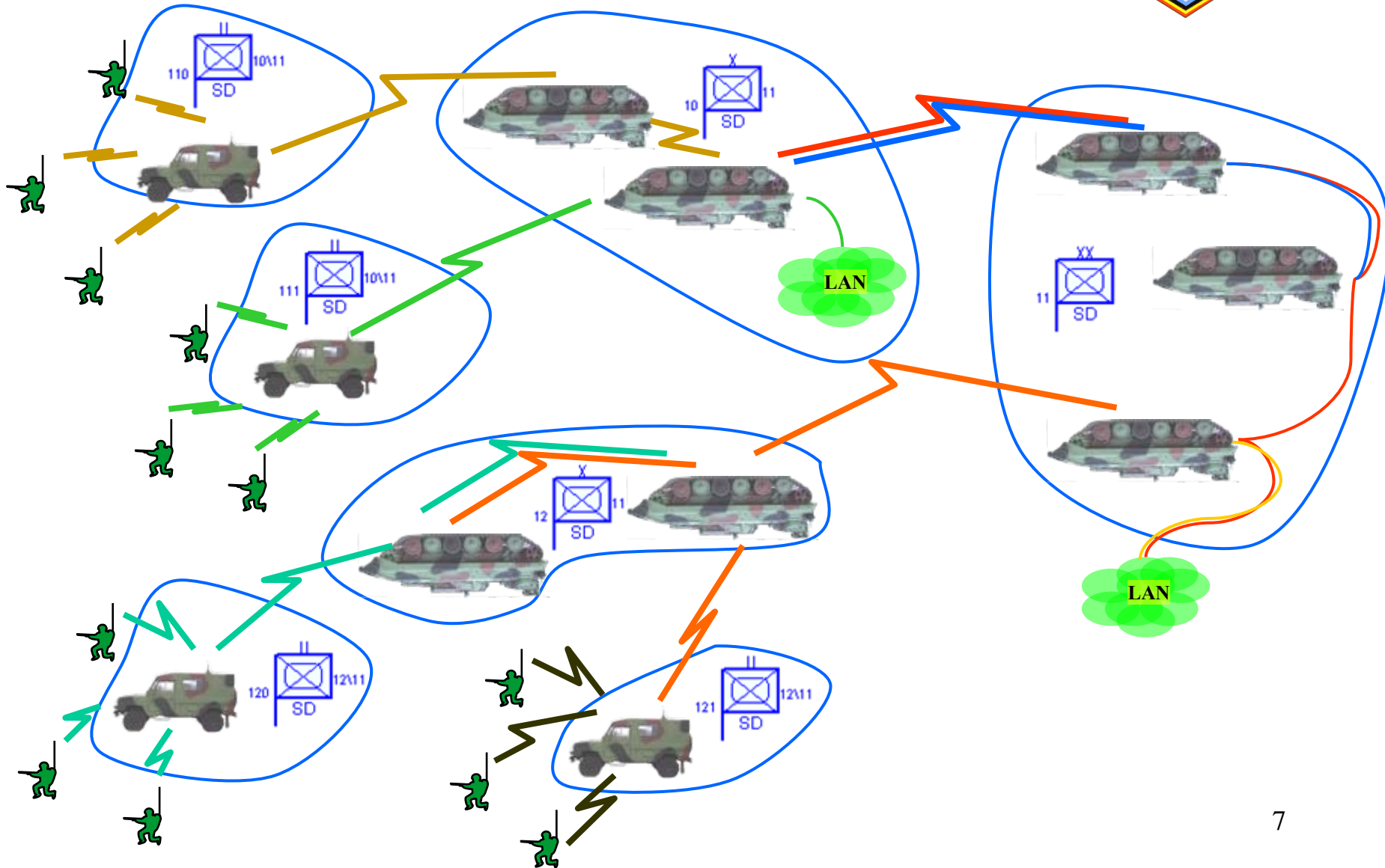
- All media integration;
- Automated data sending & packet switching routines between subscribers;
- Access control, user authorisation;
- Subscriber addressing unification.



# Automated Work Posts connections to CS

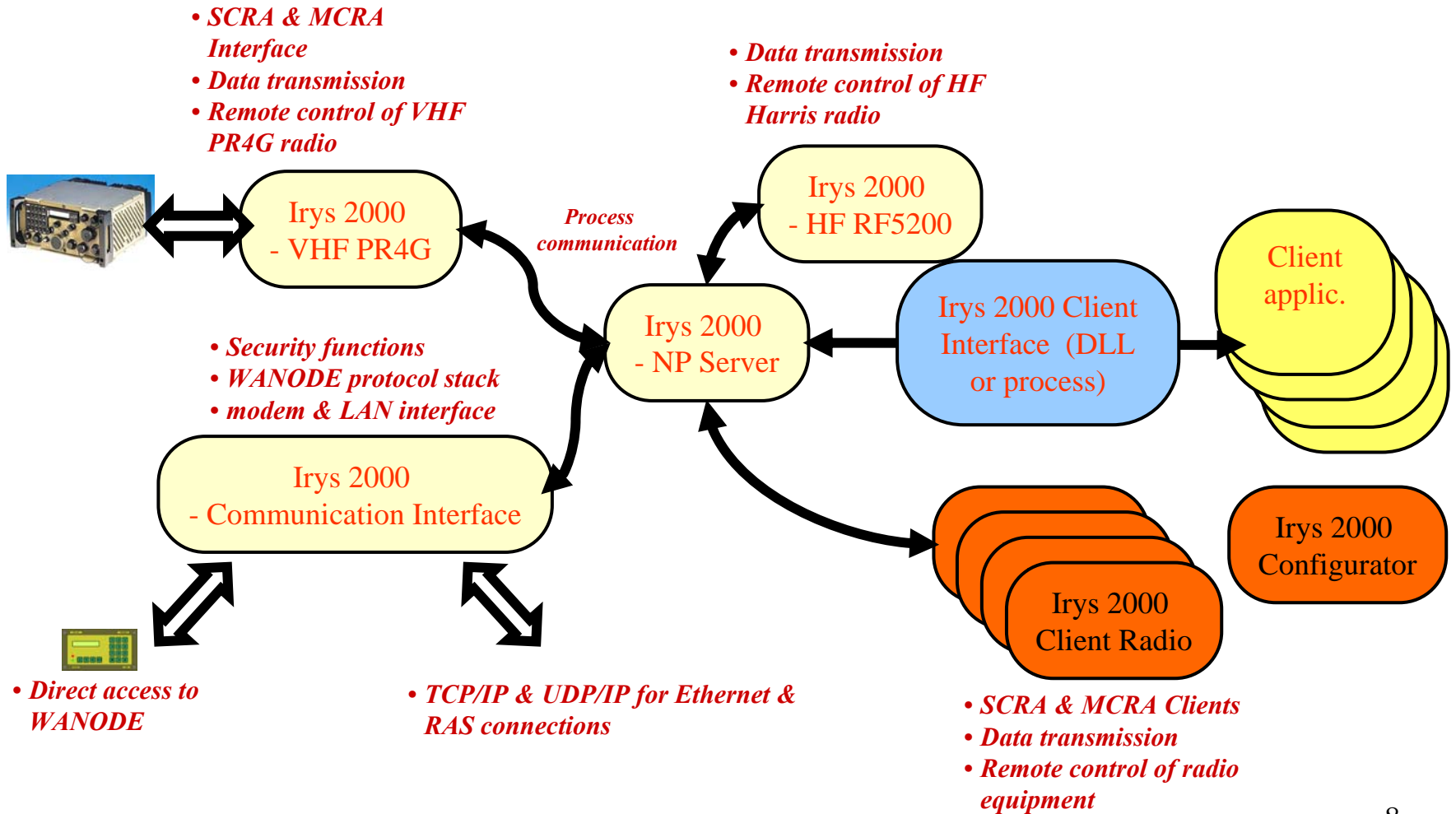


# WANODE Mobility

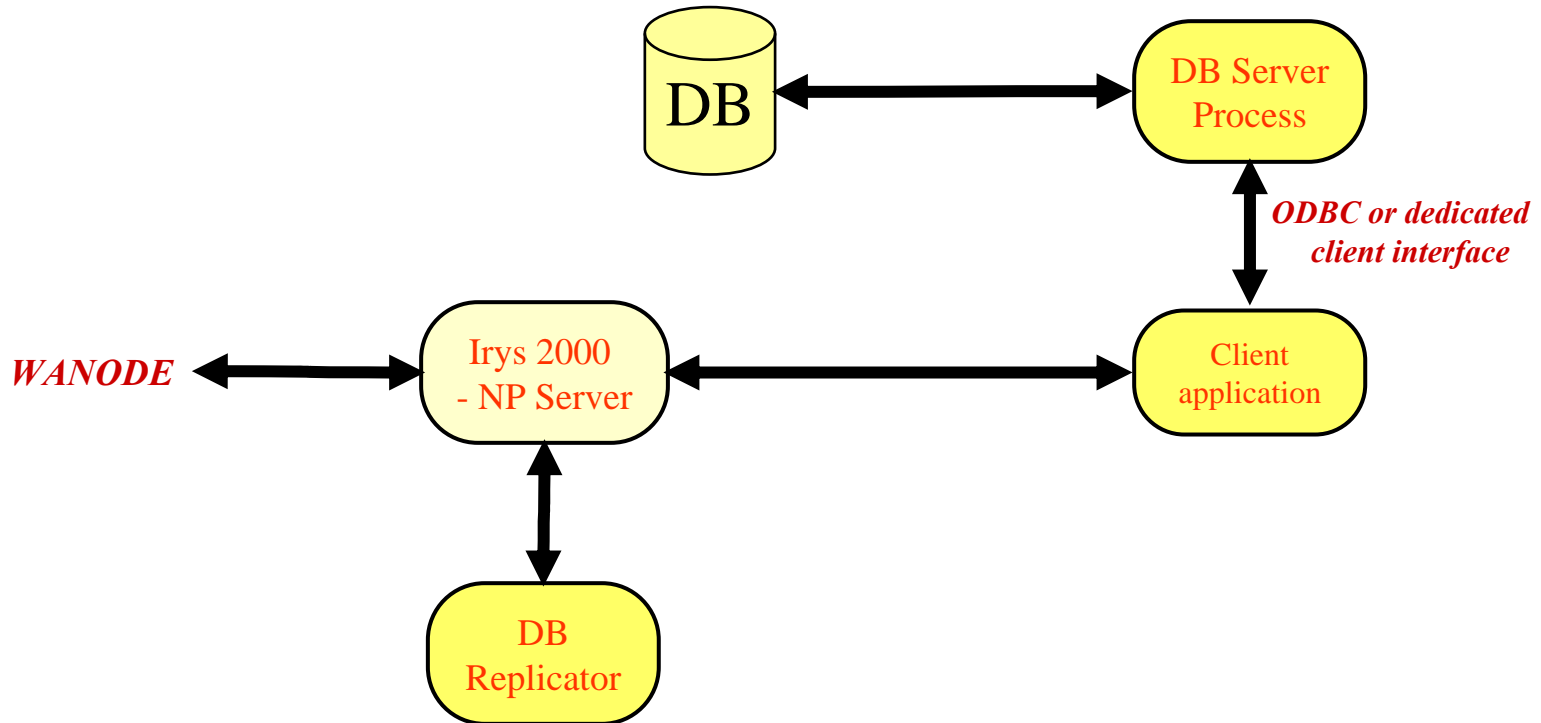




# WANODE Clients - General Structure of Communications

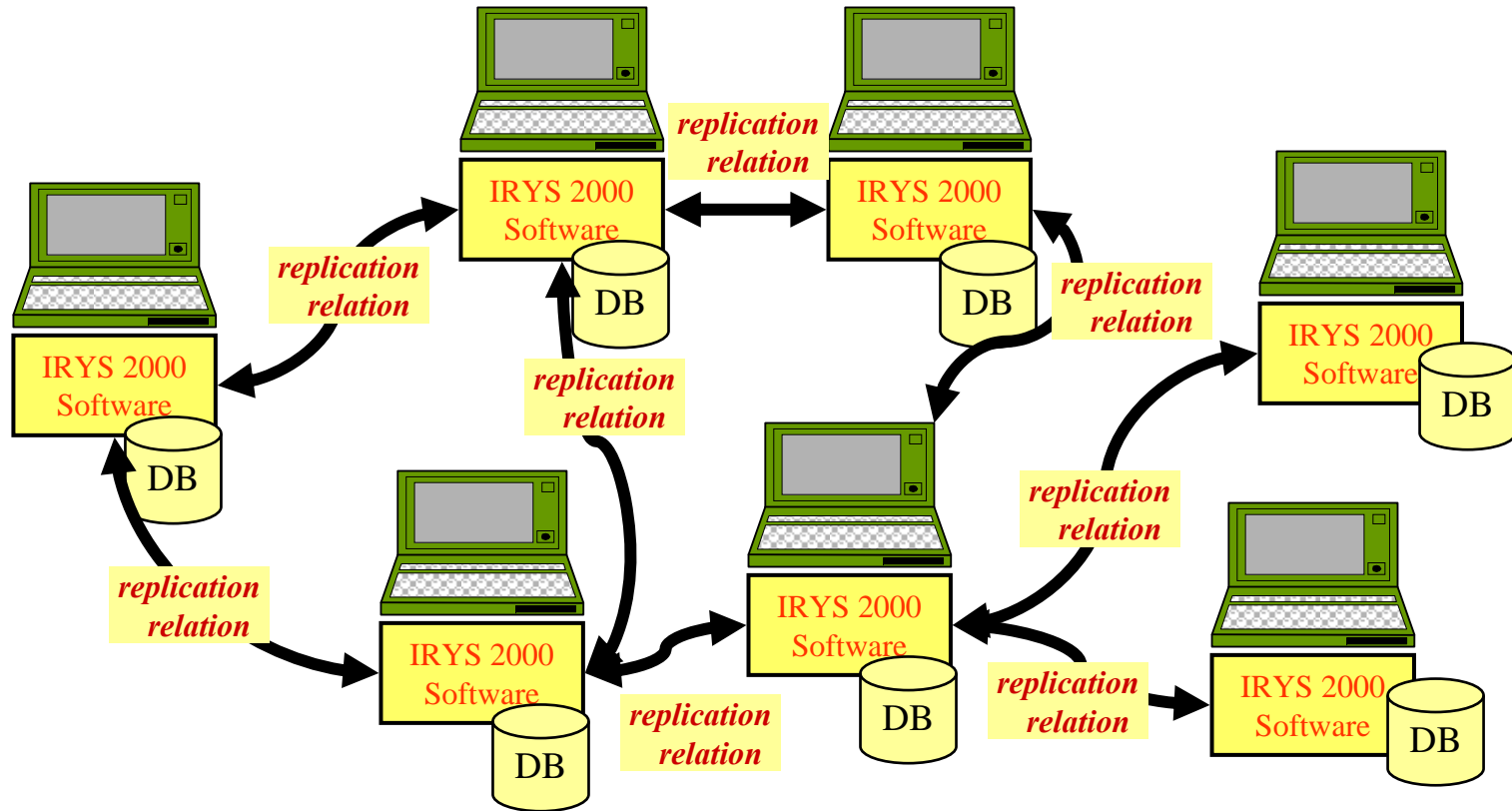


# WANODE Clients - General Structure of DB Layer



# WANODE Clients

## Concept of DB replications





# WANODE Clients

## Concept of DB Replications

- *Relation of DB replication is same as information relation between users' (AWPs)*
- *The entity of data exchanged between AWPs corresponds to contracts agreed between them*
- *There are two kinds of contracts:*
  - *answering for each query*
  - *replication after each change of data of contract interest*
- *Data synchronisation depends on timestamps differences between data source and data contractor*
- *There is unique indication of data entries in scale of whole combat system*
- *Differential data exchange ensures sending only changes and not whole records of data*
- *There is possibility to work with local database in disconnection from WANODE*
- *There is possibility to connect an external database*
- *Included history of data changes gives possibility to analyse of combat operation progress*
- *Fully distributed structure of database system ensures reliability and efficiency*
- *The system has built in database compression and archive recording*



# WANODE Clients Database Connections

