Fault Tolerance User API
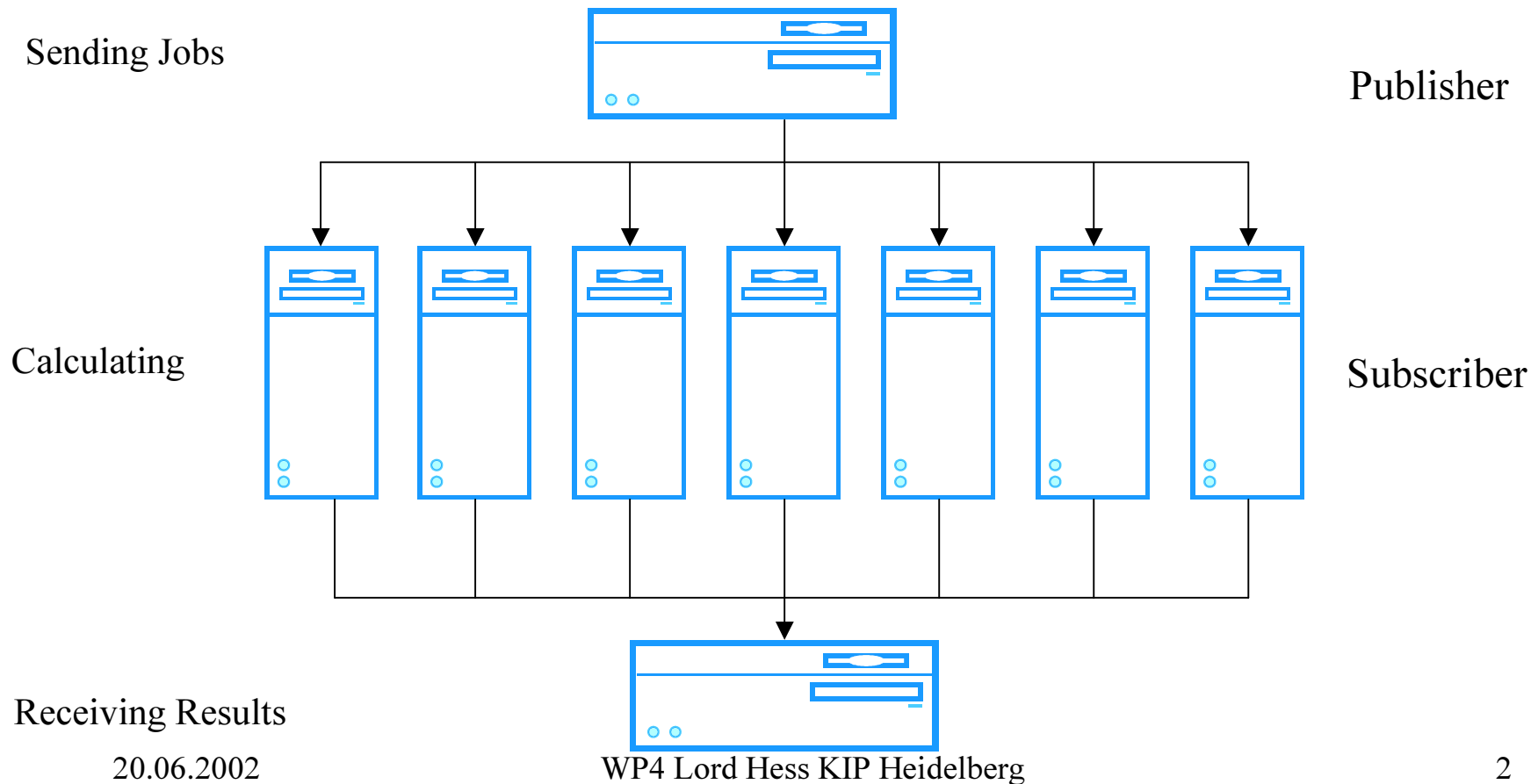
WP4, Lord Hess KIP Heidelberg

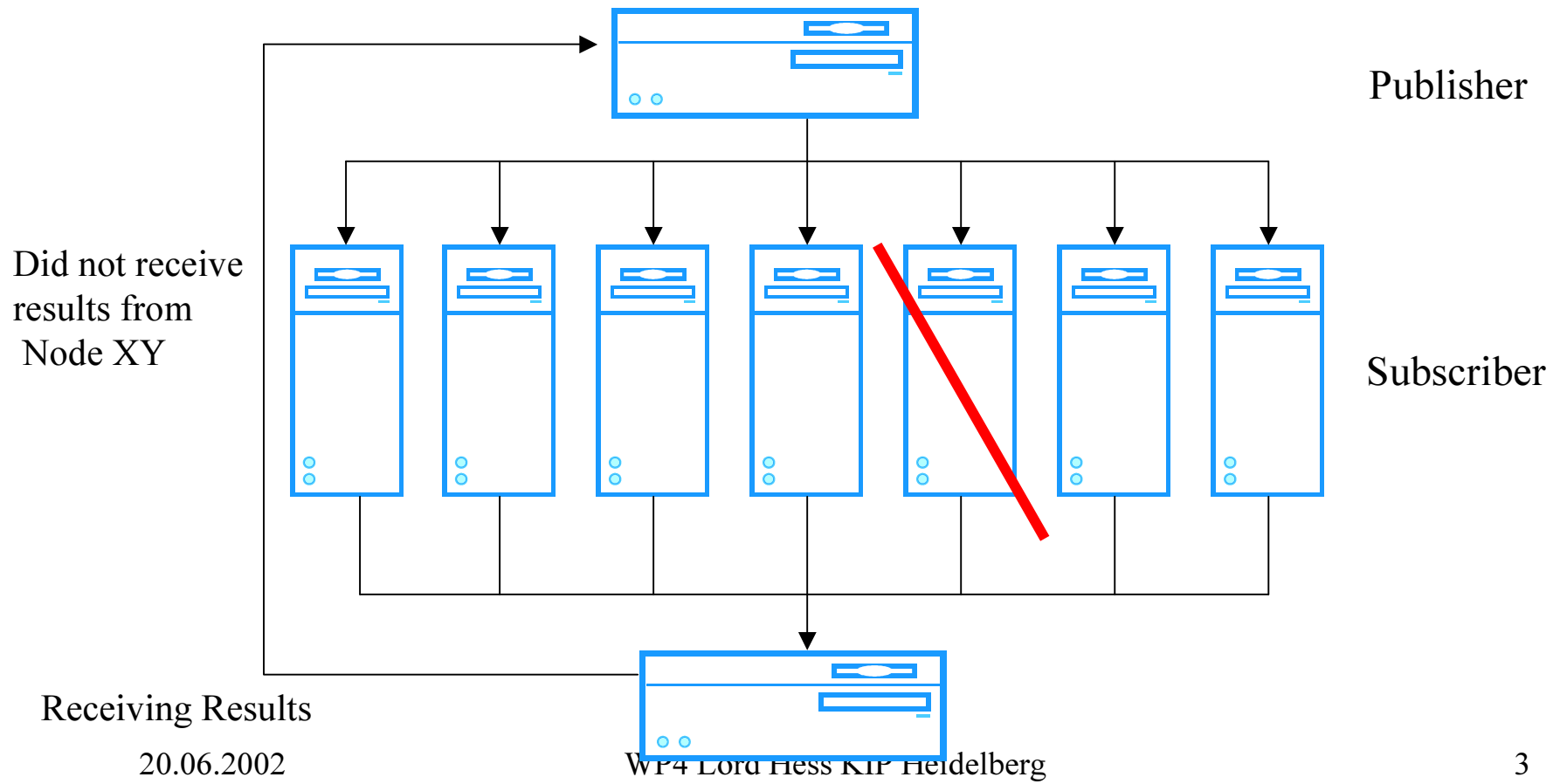# Simple Use Case I

- User application: Publisher - Subscriber

Sending Jobs

Publisher

Calculating

Subscriber

Receiving Results

Simple Use Case II

- One Node is going down

Publisher

Did not receive
results from
Node XY

Subscriber

Receiving Results

Simple Use Case III

- Publisher Node -> FT: Node XY lost

- FT ->Publisher: Node XY broken, use Node S as alternative instead , (no repair possible of node XY)

- Publisher: Sending Data to Node S

Background

- Report to Monitoring
- FT->CMS : Request for configuration of node XY
- *FT-> RMS: Job 123 needs another node with configuration Z.*
- *RMS-> FT : Use Node S*
- FT: probing configuration of node S
- FT-> Publisher: use node S as alternative

The FT User API I

/* Open/close a connection to FT host
 * The resulting handle can be used in
    subsequent FT calls
*/

ftRetVal_t openFT(const ftHost_t host,
    *handle);

The FT User API II

/* Report error using one resource in a generic way (releasing, writing,...)*/

ftAction_t resourceError(const ftResource_t R, const ftUsage_t U);

/* Request a service using an action created by the functions declared above.*/

ftRetVal_t requestFT(const ftHandle_t handle, const ftAction_t A, ftReply_t *res, const ftTimeOut_t T);

The FT User API III

/* Find (first) alternative resource, which may be used instead of resource R satisfying constraint C.*/

ftAction_t findAlternative(const ftResource_t R, ftConstraint_t C);

/* Request a service using an action created by the functions declared above.*/

ftRetVal_t requestFT(const ftHandle_t handle,

const ftAction_t A, ftReply_t *res,

const ftTimeOut_t T);

Problems & to be done

- Many errors are possible

- Networkintegration

- Connecting to monitoring, cms & rms