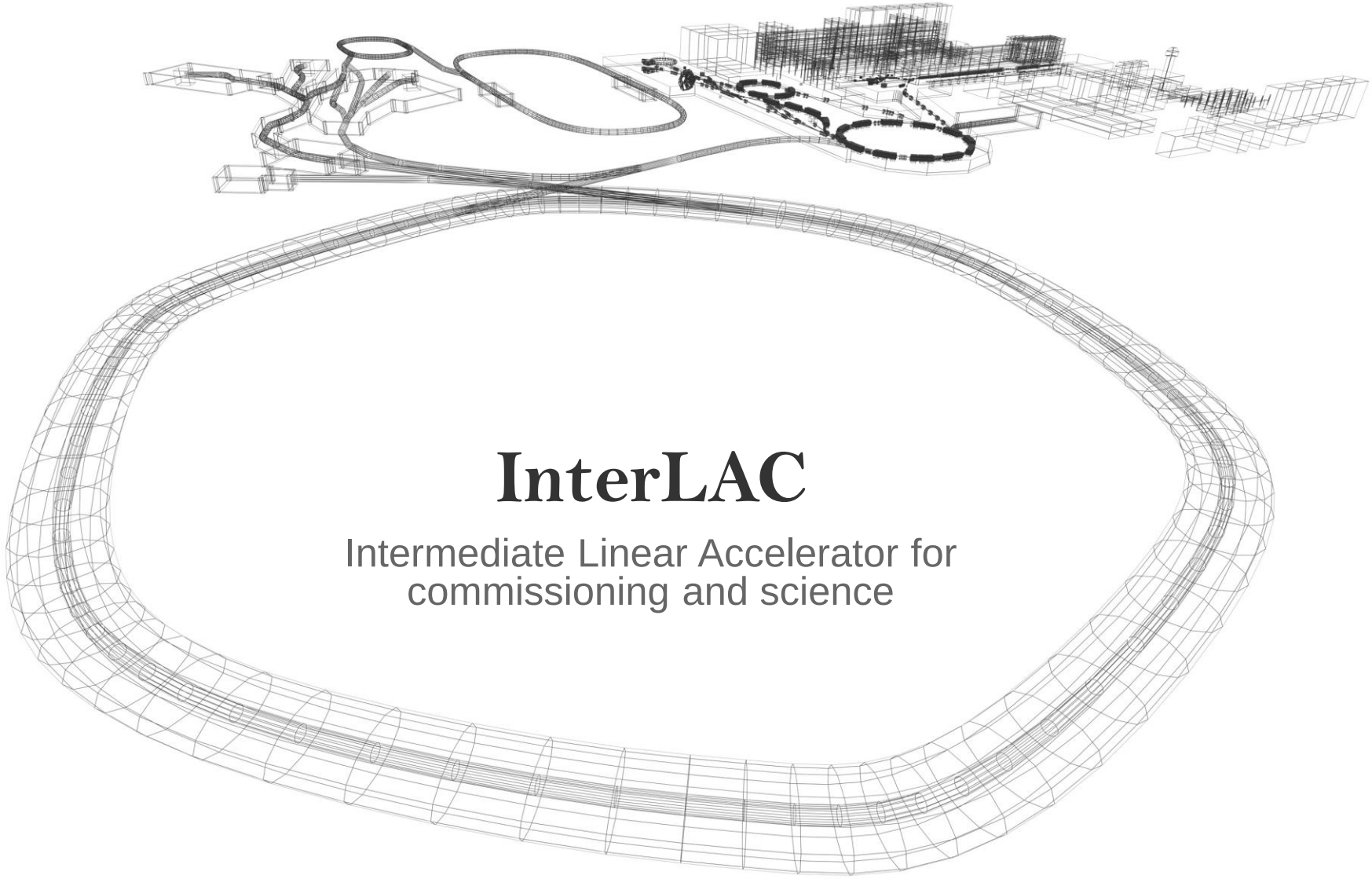


InterLAC

Intermediate Linear Accelerator for commissioning and science

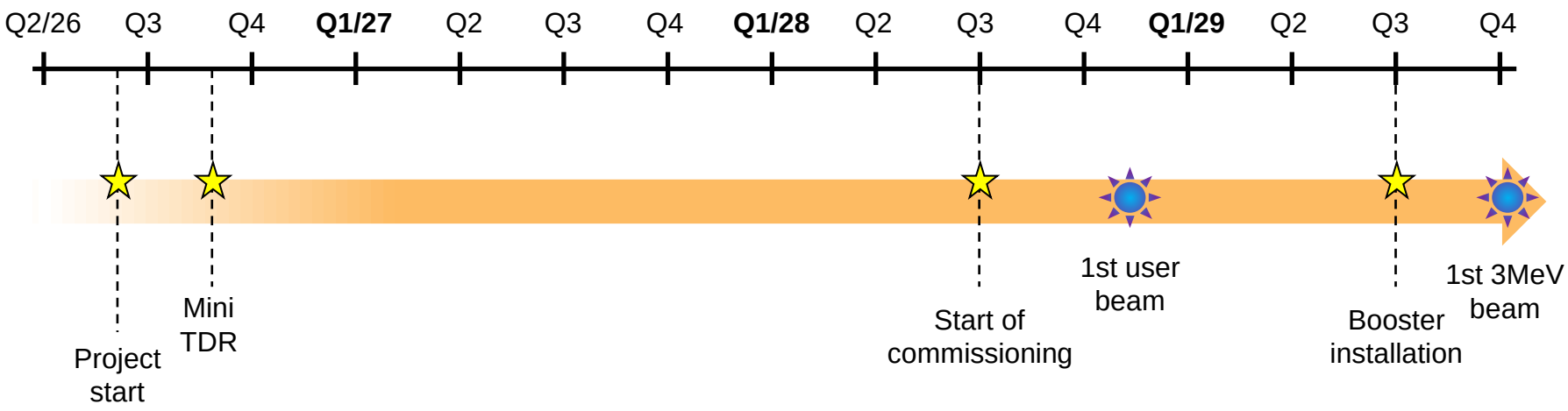
(Today‘s) Goals of the subproject

- Beam with HLI-parameters for experiments in EH and SIS18
  - <= Xe (A/q<=6)
  - 1,4 MeV/u (>= 3 MeV/u)

- 1. provide necessary information for decision what to build where
  - possible sites
  - possible layout
  - beam dynamics check (general feasibility, no details)
  - preliminary component lists (first guess, estimated availability/prices)
  - estimated timelines (no detailed planning, analogies to past projects)

- 2. confirm the usability of old RFQ, new IH‘s, and other relevant components
- 3. project plan depending on decision by GF
- …

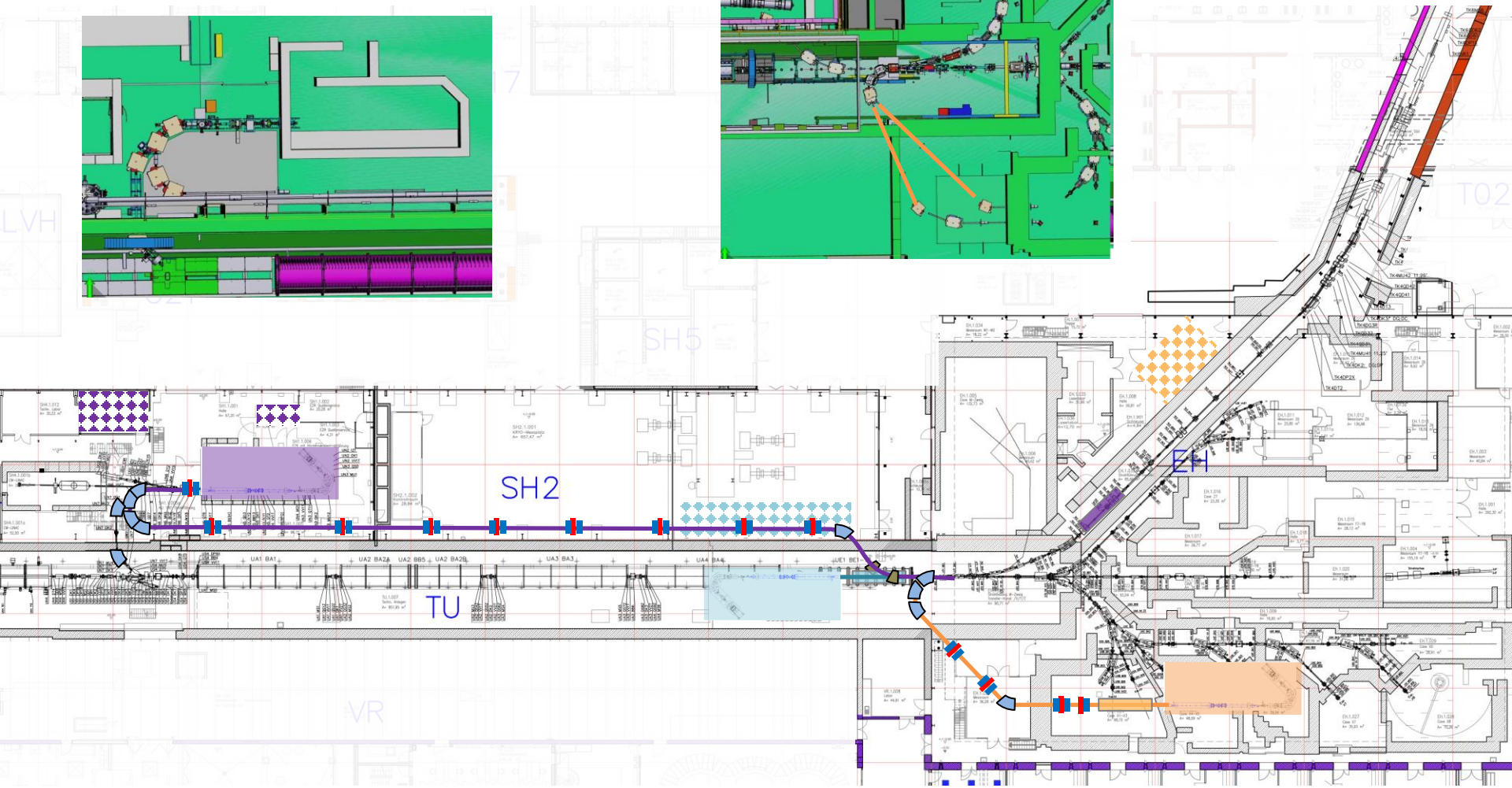
Project timeline



- Operation planned until ~2031 (target for full UNILAC operation)
- Timeline set by scientific requirements
- **Very** ambitious
  → What can we build in this time?

- Start work before full specification

Present options for InterLAC



InterLAC options Pro‘s & Con‘s

	= HLI	in TU	in EH
Accelerator work	build only booster + commission HLI	build full accelerator + commission HLI	build full accelerator + commission HLI
Beam transfer	Long beam transfer	short transfer	medium transfer
UNILAC operation	booster in TK could block	blocked (parallel setup?)	no interference
Civ. constr./TGA	holes to TU, fence in SH2, wall in TU, re-cable HLI, power in SH1/2	Wall in TU, power in SH2(?), power/water in TU	re-order caves, (remove container), wall in TU, power/water in EH
M1 / tunnel refurbishment	M1 in SH1 tbd, need end of TU	need significant part of TU	need end of TU
Magnets	<~ 10 quad mult. & 7 dipoles Refurbishment of quads, re-order dipoles for HLI	2-3 quad mult. & 0/2 dipoles	4-5 quad mult. & 4 dipoles
Impact on science	1 accelerator for science/ FAIR comm., UNILAC test, SIBAF; no 3 MeV in EH	UNILAC energy ≤ 8.6 MeV/u (until Alvarez 2.0)	remove user stations X1-6
HELIAC synergy/ interference	Partially same injection, block HELIAC construction	use SIBAF cavities, use SH2>TU conn. for cabling	use SIBAF cavities, no interference
AOB	only scenario w/ >1ms pulse length		

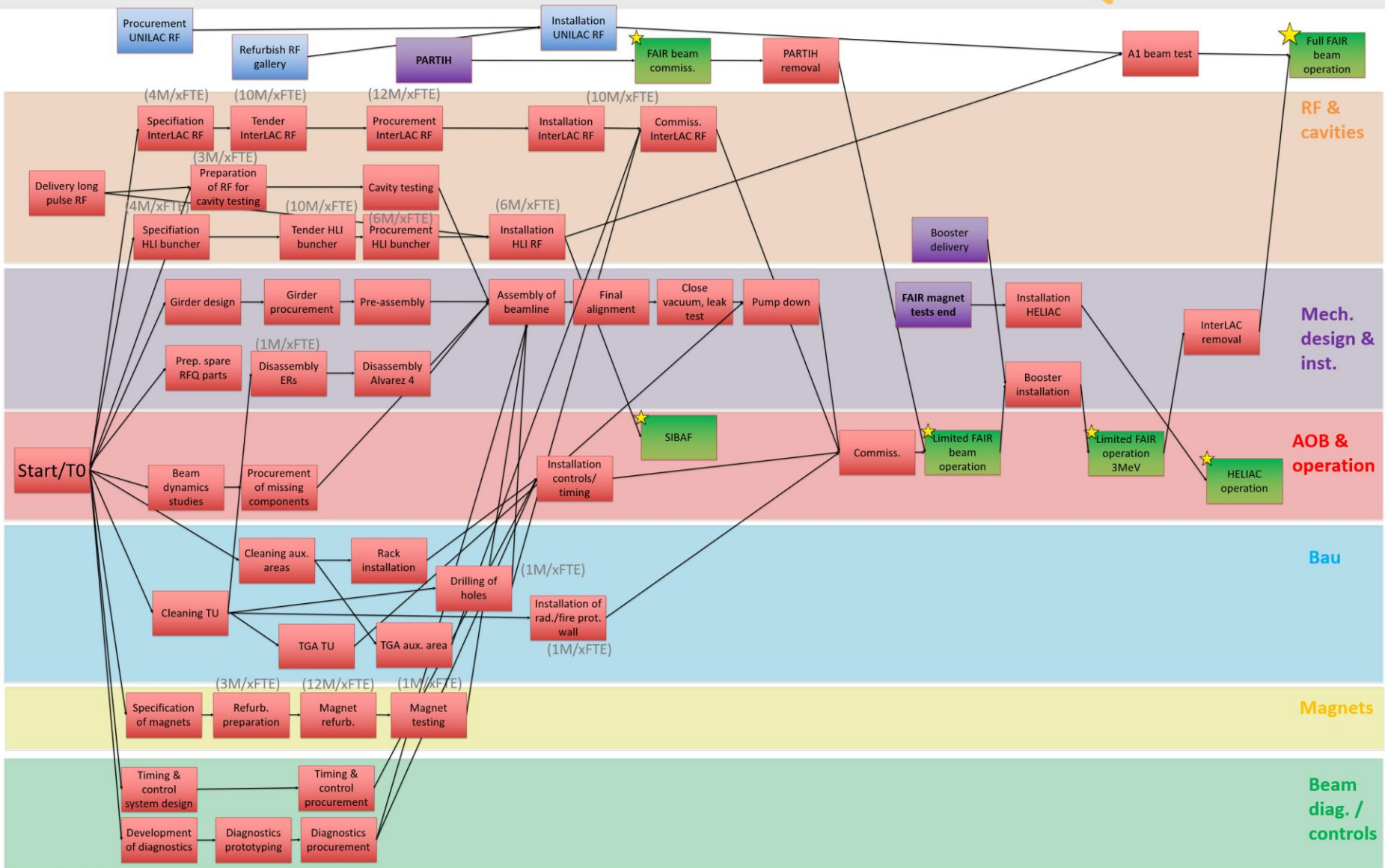
- will ask for user feedback for decision

Work packages for InterLAC project

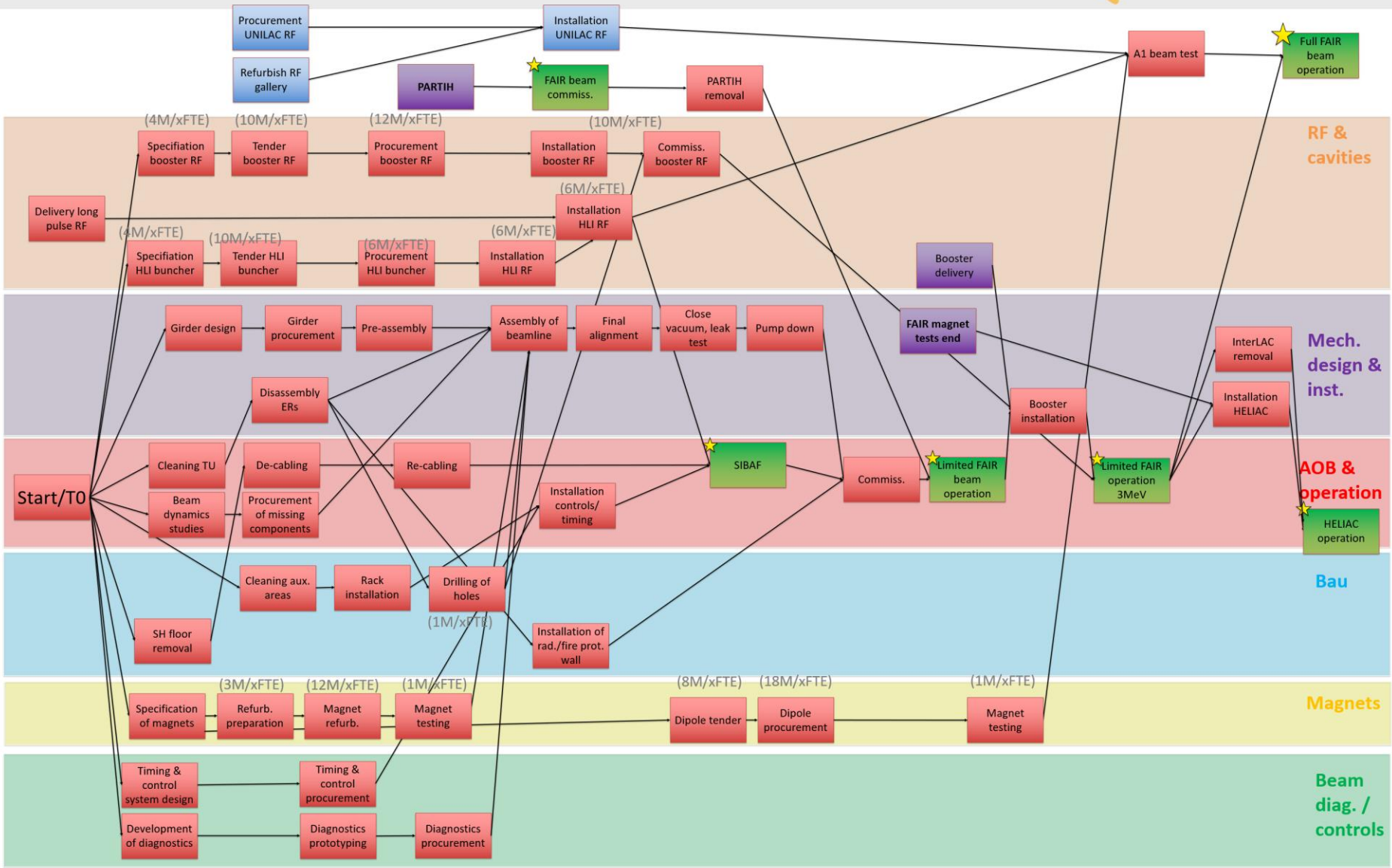
- Preliminary work breakdown structure defined
- will ask for feedback on assumed/missing personnel
- Immediate comments?

SP_03	Projekt 3: InterLAC, HLI-type Linac		
WP1	Schedules & documentation	G. Loisch	N
WP2	Beam Dynamics & system design	M. Miski-Oglu	S. Yaramishev
WP3	Cavity inspection, procurement & testing	H. Vormann	N
WP4	Safety/Radiation protection/TVS	T. Radon	N
WP5	Civil construction incl. TGA	A. Giesler	N
WP6	Magnets	C. Mühle	N
WP7	Power Converters	C. Hunkel	N
WP8	RF systems	C. Herr	N
WP9	Beam Instrumentation	B. Walasek-Höhne	N
WP10	Vacuum	A. Krämer	N
WP11	Ion source	J. Mäder	M. Galonska
WP12	Timing & Controls	P. Gerhard	N
WP13	Mechanical design	C. Will	N
WP14	Logistics & installation	D. Acker	N
WP15	Commissioning	U. Scheeler	N

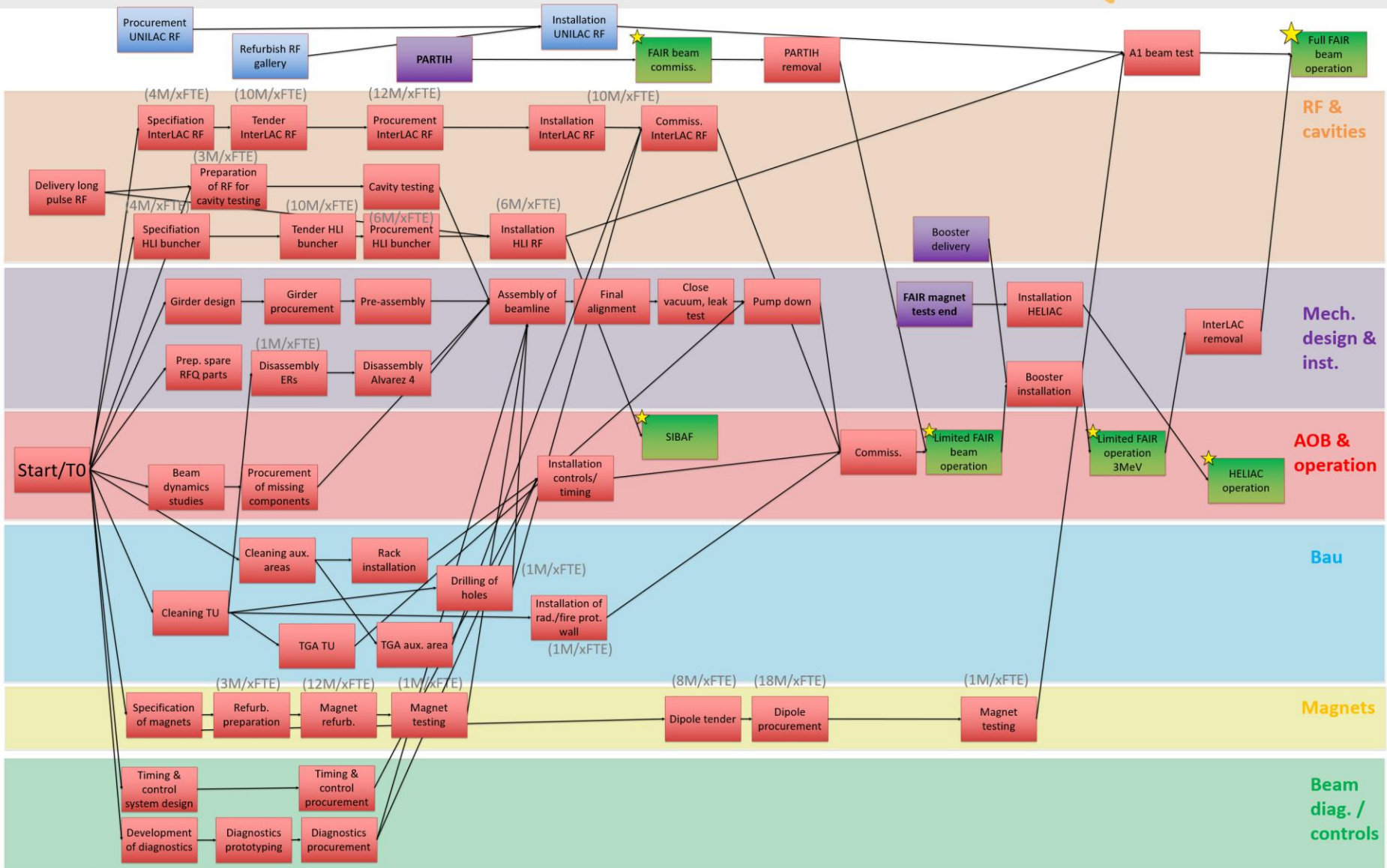
InterLAC in TU



InterLAC = HLI (SH2 transfer)



InterLAC in EH



Input for MAC – required further input

- thanks a lot for quick response on personnel estimates
- would like to get more details
  - rough timelines for 3 scenarios (estimated times, no exact planning of e.g. overlap)
  - personnel requirements ~aligned with timelines
  - cost estimate for 3 scenarios

- → will send around & ask
  - WBS → quick feedback on responsible persons
  - task plan → missing steps, time estimates (personnel?)
  - rough component list → missing components, price estimate

- Comments/suggestions/questions?

So many options, so little time…

- Current tendency: have to do rough planning for all scenarios

  → decision based on sum of all information

- Start ordering critical components directly after GF decision (~before detailed planning)
- Rough project timeline then quickly needs to be aligned with
  - PARTIH
  - UNILAC
  - FAIR
- Need everybody‘s input of information and potential risks/oversights!