

# Changes in Contract and Tender documentation after Preliminary market consultations (October 2024) PF coils for COMPASS-U

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- IPP would like to thank the participants of the Preliminary Market Consultations for valuable feedback during the tender planning.
- This presentation repeats the questions and information provided in the presentation “PMC tender administration.pptx” on each slide (in grey colour) and then provides the resolution in the part of the slide denoted as “IPP planned resolution”.
- Disclaimer: “IPP planned resolution” is still a plan. It is probable that IPP will follow the plan, but unforeseen “last minute” change can happen!
- IPP considers this planned resolution to be the best compromise between the needs of the COMPASS-U project and the preferences expressed by the participants of the Preliminary Market Consultations.

# 1. Time limit for the tender Bid

- IPP plans to issue a **45-day** notice for the preparation and submission of the bid.  
**Is that adequate for your bid preparation?**

**note:** The tendering company can raise official request to **prolong time limit** during time period for the bid through lawyer responsible for tender or through website Tenderarena.cz. IPP can either accept or reject the request.

IPP planned resolution: We plan to **use 45-day notice** and we plan to **be reasonably considerate concerning requests to prolong the time limit** ( e.g. if a request is delivered in the last one third of the time period with explanation that the participant needs reasonably more time to finish the bid, it is very likely that IPP will accept the request).

## 2. Tender type and Price cap

- IPP plans to launch the tender as a framework purchase agreement with total **price limit of 2.8 MEUR** without VAT. **Will you submit the bid?**

### Framework agreement:

#### Item 1 = basic configuration

order obligatory, delivery **deadline 24 months** (coil acceptance tests at IPP premises)

- 10 PF coils, 1 prototype coil
- Insulation samples, 3x3 mock-up, material tests and qualifications, coil tests, transport
- Tests include Full paschen test of prototype coil, Local Paschen tests of all 10 PF coils

#### Item 2 = 8x Paschen test of smaller coils

2xPF1a, 2xPF1b, 2xPF2, 2xPF3, order optional, deadline of chosen coil **prolonged by 2 months**

#### Item 3 = 2x Paschen test of larger coils

2xPF4, order optional, deadline of chosen coil **prolonged by 2 months**

**IPP planned resolution (price cap):** We plan to **launch the tender with 3.0 MEUR price limit.**

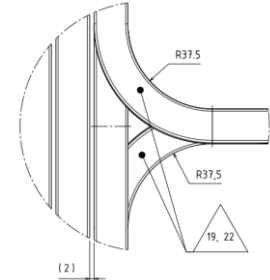
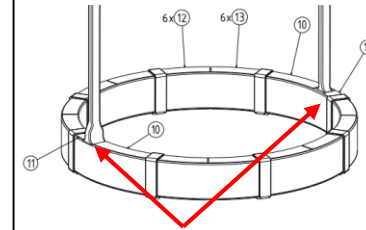
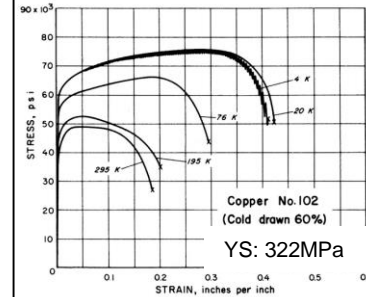
**Explanation:** IPP wants to avoid the necessity to repeat the tender procedure and gain extra delay in case that the potential suppliers find an unforeseen expense only after careful studying of the Technical specification during the tender procedure.

**IPP planned resolution (delivery deadline – 1/2):** **26 months will be the delivery deadline** (24+2, based on the assumption of ordering the Paschen tests), **but a time period of 3 months with a very limited penalty** (0.005% daily) **will be added**, in order to provide a time reserve for the Supplier in case of unforeseen delays.

- The participants of the Preliminary Market consultations raised a concern that manufacturing “small radius conductor bends” is a R&D activity and it may lead to delays, if it proves to be more difficult than anticipated.
- The bend is  $R_{inner}=37.5 \text{ mm}$  for  $15 \times 14.7 \text{ mm}^2$  conductor (2.5x conductor width) with  $YS > 250 \text{ MPa}$  and  $R_{inner}=50 \text{ mm}$  for  $20 \times 17 \text{ mm}^2$  conductor (also 2.5x) with  $YS > 150 \text{ MPa}$ . => The simple geometrical calculation gives copper elongation 16.7% for bending around the center of the conductor (52.5mm/45mm) => let’s assume that 20% is needed.
- The bend: i/ is borderline doable on room temperature, ii/ can be done if the copper is cooled to LN2 temperature 77 K during bending (YS, UTS and “elongation at break rises” significantly), iii/ can be done with local (!) annealing (e.g. bend 45°, anneal bend (cooling straight part), bend remaining 45°). In this case tensile tests of the bend have to prove its YS is not compromised.

IPP planned resolution (delivery deadline – 2/2):

- IPP will implement a safeguard into the Contract : Within the cost of Basic configuration, the Supplier shall try up to the three proposed processes above by bending tests, document the tests and if the tests do not yield acceptable results, the responsibility to develop the bending process will pass to IPP (it can be reasonably expected that the R&D will be separately contracted to the Supplier). The Contract deadlines will be delayed/frozen until the bending process is provided by IPP.



## 4. Advance payments

IPP proposes the following advance payments:

1. **10 % of the Purchase Price** of Basic Configuration excl. VAT  
after the Order of Basic Configuration is accepted (i.e. = start of contract)
2. **5 % of the Purchase Price** of Basic Configuration excl. VAT  
after acceptance of "MIT plan initial version" by IPP (i.e. = manufacture plan delivered)
3. **10 % of the Purchase Price** of Basic Configuration excl. VAT  
after the manufacturer stacks > 75 % of conductor for production of coils
4. **25% of the Purchase price** of Basic Configuration excl. VAT  
after successful FAT of prototype coil (factory acceptance tests)

Do you agree with these advance payments?

IPP planned resolution (advance payments): **advance payments increased**

Time [month]	Event	Advance payment	Partial payment	Cumulative cash-flow
0	Order of Basic Configuration is accepted	15%		15%
4	acceptance of "MIT plan initial version" (this is de facto Preliminary Design and plan for tests)	20%	5% (-35% advance payments = +3.25%)	38.25%
6-10	manufacturer acquires > 75 % of conductor for production of coils	20%		58.25%
16	successful FAT of prototype coil	10%	~15% (-66.58% $((68.25-5)/(100-5)*100)$ effective advance payments = +5.013%)	73.263%
24 or 26	Site Acceptance Tests of all PF coils (26 months if Paschen tests are ordered)	-	~80% (-66.575% $((73.263-20)/(100-20)*100)$ effective advance payments = +26.737%)	100%

## 2. Achievable tolerances of coil builds

### Presumed PF1-3 coils tolerances:

- Inner diameter  $-0 + 0.1$  mm
- Outer diameter  $-0 + 1$  mm
- Height  $-0 + 1$  mm
- Top and bottom surface flatness  $0.1$  mm
  - Strict surface flatness tolerance is essential for us.

Please take note that we will require the manufacturer to keep some minimum thickness of turn-to-turn and ground insulation, therefore it will not be possible to arbitrarily reduce the thickness to correct for excessive insulation build-up.

Also, we will require the manufacturer to keep prescribed volumetric insulation fiberglass ratio (not set yet, but presumed 35 %).

**Are these tolerances/requirements achievable? If not, what is reasonably achievable?**

### IPP planned resolution:

- IPP will **increase the tolerances** + IPP will **allow fine machining of the top and the bottom surface of the coils** (to reach the required precision of “Top and bottom surface flatness”)