

UNIT CONVERSION

not based on the Metric System

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The Aim of this Poster Presentation

- ❑ To Offer Possible Solutions for Markup of UNITS based not on the Metric System
 - ⇒ Especially Focusing on @quantity attribute of <measure> element
 - ⇒ In order to make use of Transactionography [Tomasek & Bauman, 2013]
- ❑ To Discuss Unit Conversion and Invite Feedback from other Region's Markup Examples than Japan

Target | Engi-shiki, Admin. Manual in 10c. Japan

- ❑ In the *Engi-shiki*, there are variety of documents on governance: Distribution of Taxes and Offerings to the Govt., Necessities for Festivals and Rituals, etc.
 - ⇒ Through Tracing the Movements of Objects from where/whom to where/whom, we can grasp some of the Social Aspects of that time.
 - ⇒ At first, it is necessary to encode OBJECTS which were measured in weight or length.
- ❑ 銅二千五百十六斤十兩二分四銖
 Copper 2516Kin 10Ryo 2Bu 4Shu (in weight)
 cf. 1Kin = 16Ryo, 1Ryo = 4Bu, 1Bu = 6Shu

Possible Solutions

- ❑ <unit> & Nested <extent> Elements

```
<extent>
  <measure commodity="銅">銅</measure>
  <num value="2516">二千五百十六</num>
  <unit type="weight">斤</unit>
  <num value="10">十</num>
  <unit type="weight">兩</unit>
  <num value="2">二</num>
  <unit type="weight">分</unit>
  <num value="4">四</num>
  <unit type="weight">銖</unit>
</extent>
```

Cf. About <unit> element, see below:
 'Add new element <unit> #1461',
<https://github.com/TEIC/TEI/issues/1461>

Further Implications

- ❑ What is necessary for TEI to be INTERNATIONAL Standard for Encoding Sources around the World including non-European Area?
 - ⇒ Though we focus on a Japanese historical source, the Problem on UNIT CONVERSION can be often seen within other regions, e. g. British isles.
 - ⇒ It should be important for us to discuss how we consider EUROPEAN VIAS in TEI.

Problem | Original or Internationalized Value?

- ❑ How can we Mark-up this?
 - ⇒ Current Scheme only permits numerical values based on the Metric System like that:

```
<measure commodity="銅"
  quantity="2516.666666" unit="斤"/>
```

- ❑ However, It Should be Important to Keep the Original Values in Certain Cases
 - ⇒ In this *Engi-shiki*, such multiple units itself are the testimony that the value was regulated in the earlier period before the *Engi-shiki* was out.
 - ⇒ Such values are equal to ONE-THIRD of the certain values. (cf. Exactly 7550Kin)

- ❑ <extent> & <measure> Elements

```
<extent>
  <measure commodity="銅">銅</measure>
  <measure type="weight"
    quantity="2516" unit="斤">二千五百十六</measure>斤
  <measure type="weight"
    quantity="10" unit="兩">十</measure>兩
  <measure type="weight"
    quantity="2" unit="分">二</measure>分
  <measure type="weight"
    quantity="4" unit="銖">四</measure>銖
</extent>
```

- ❑ @n Attributes in one <measure> Element

```
<measure commodity="銅" n="2516/10/2/4"
  unit="斤/兩/分/銖">
  銅二千五百十六斤十兩二分四銖</measure>
```