



PIANC French Section

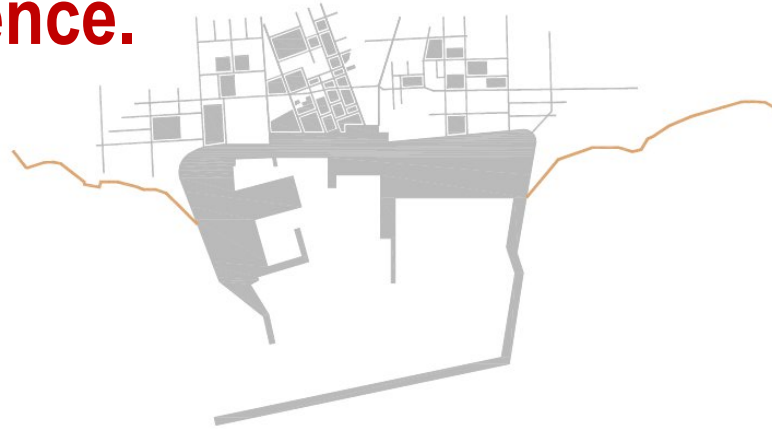


# PIANC Mediterranean Days and Conference «Port of the future» by Cerema 25 to 27 october 2023 in Sete France

Efficiency and flexibility in port masterplans by means of  
Technical Functional Adaptations.  
The Italian experience.

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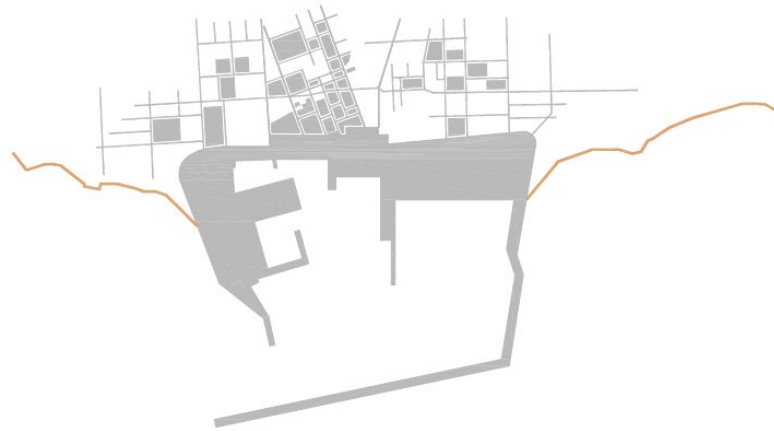
**Efficiency and flexibility in port masterplans by means of Technical Functional Adaptations.  
The Italian experience.**



25th October 2023

## SUMMARY

1. Context
2. Objective
3. Typological classification of TFA
4. Conclusions



# 1. Context



Italian law n. 84 introduced an updated administrative discipline of **port masterplans**

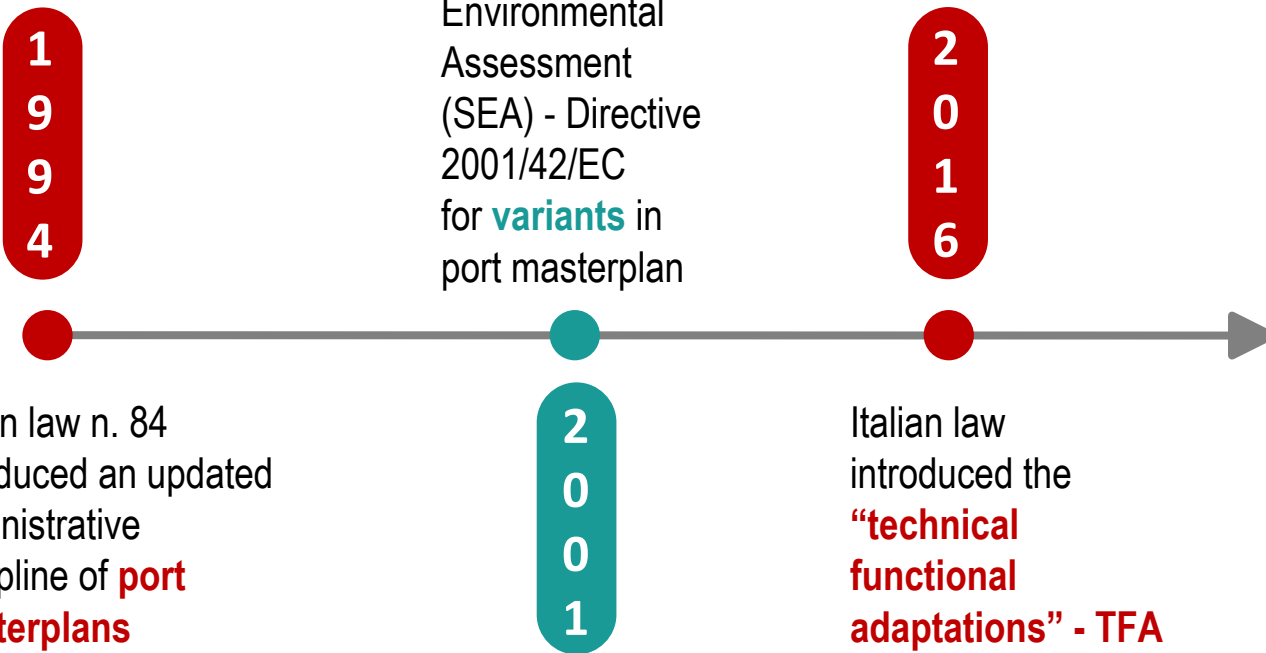
**Port masterplan** defines:

- operational port areas
- port-city interaction areas
- areas located behind the port
- corridors of Infrastructural connection with the urban area and the territory

Strategic Environmental Assessment (SEA) - Directive 2001/42/EC for **variants** in port masterplan

**“Variants”** (i.e. the **substantial changes** in the port masterplan) pass through the technical assessment of the High Council of Public Works, and it ends with the **Strategic Environmental Assessment (SEA)** at the Ministry of the Environment.

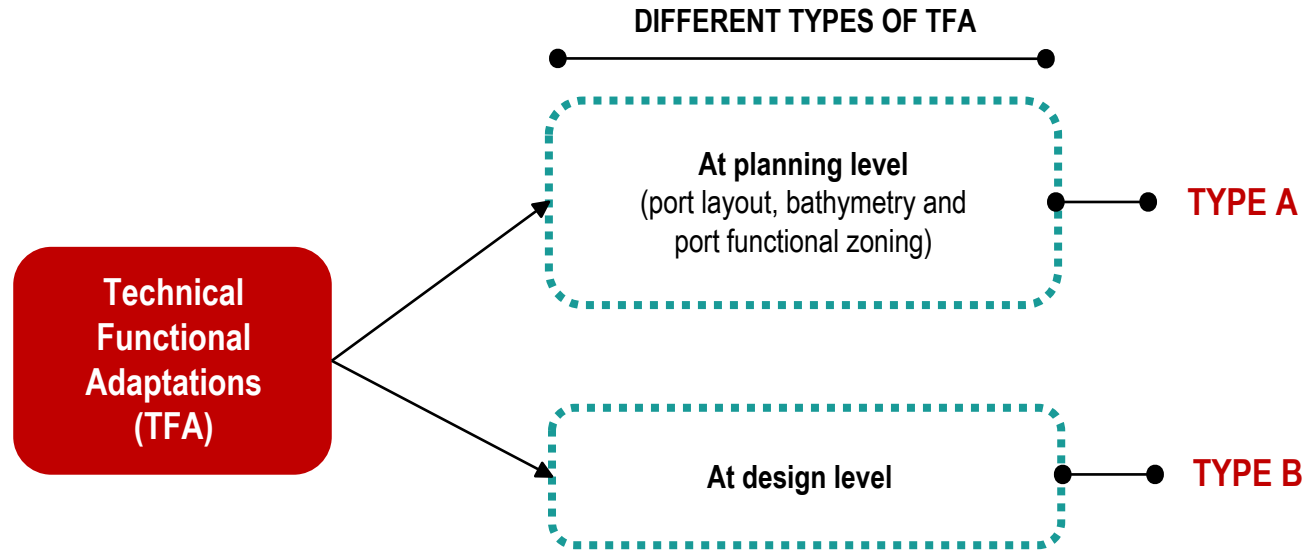
**Variants procedure involves quite a long time**, not always compatible with the pressing needs of the maritime traffic. Because of that, **it arose the need of identifying a streamlined approval discipline for non-substantial changes** in the port masterplan, which do not constitute a **“variant”** of the masterplan itself.



**TFA have made possible to identify timely solutions** in order to modify the contents of the port masterplan in a non-substantial way.

**The non-subjectability of the TFA to SEA** procedure has allowed significant time savings in the carrying out of the related infrastructural works

# 2. Objectives



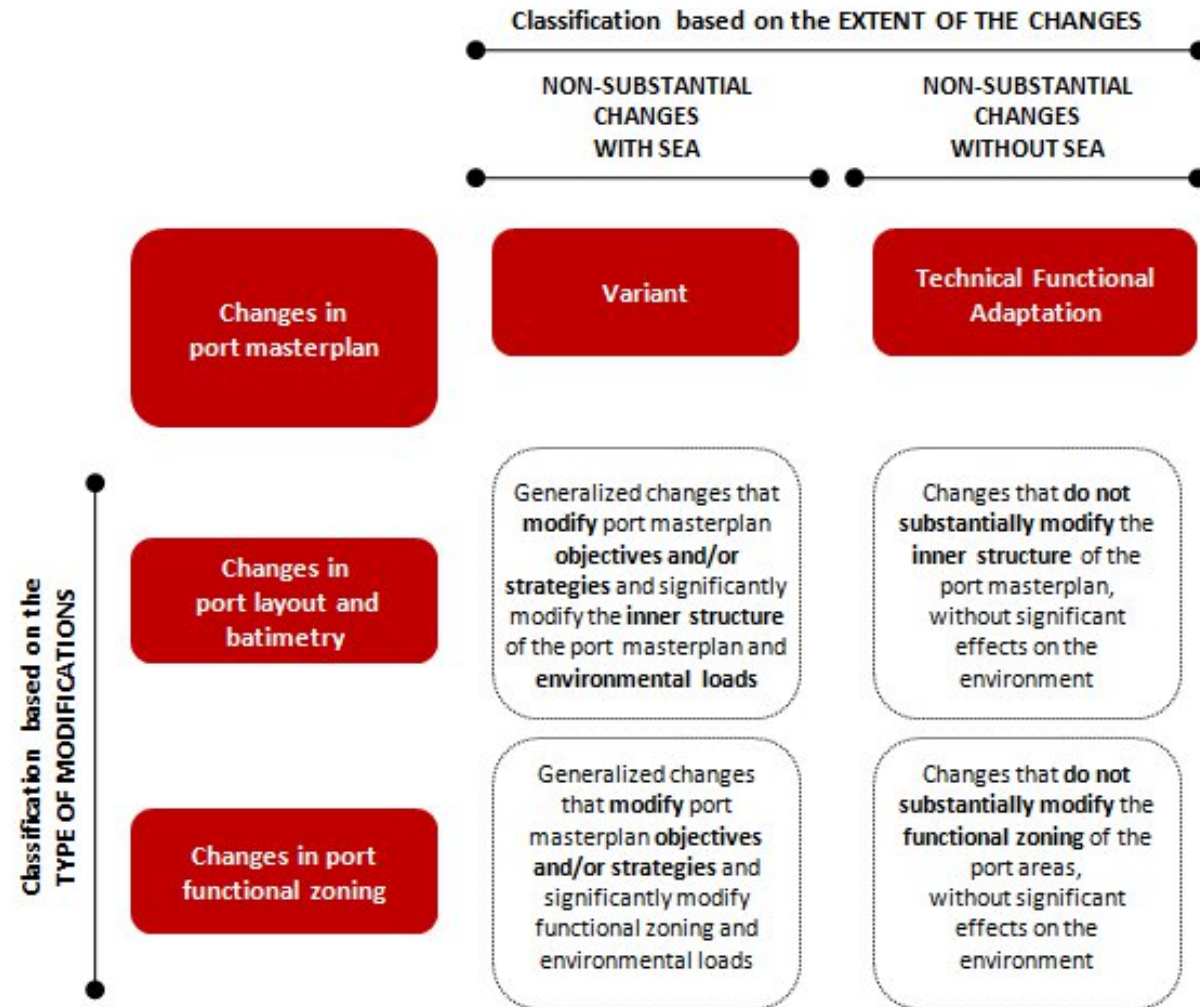
The **principle** that guided the introduction of TFA in the port masterplan, **responds to a need for proportionality between the importance and extent of changes introduced in the port masterplan and the level of complexity of the related administrative procedure.**

The several procedures activated at national level, have made possible to **identify a first typological classification of “type a)” TFA** (related to practical case studies), which can be reasonably enlarged to other hypotheses of potential TFA.

The typological classification proposed in the paper provides a **proposal** to be evaluated, at governmental level, **in the current updating phase of the technical “Guidelines for the drafting of port masterplans” of the High Council of Public Works in Italy**, taking into account the technical and conceptual framework offered by PIANC WG 158 *“Masterplans for the Development of Existing Ports”*



*Edition 2017  
Review in progress*



- The typological classification of “type a)” TFA takes into account:
- case studies already faced and solved
  - further potentially applicable cases of TFA.

For some specific typologies, TFA contribute to the achievement of the following SDGs:



Goal 7 - Clean and accessible energy



Goal 11 - Sustainable cities and communities



Related to the environmental sustainability objectives of EU Regulation 2020/852, specific typologies of TFA can usefully contribute to:

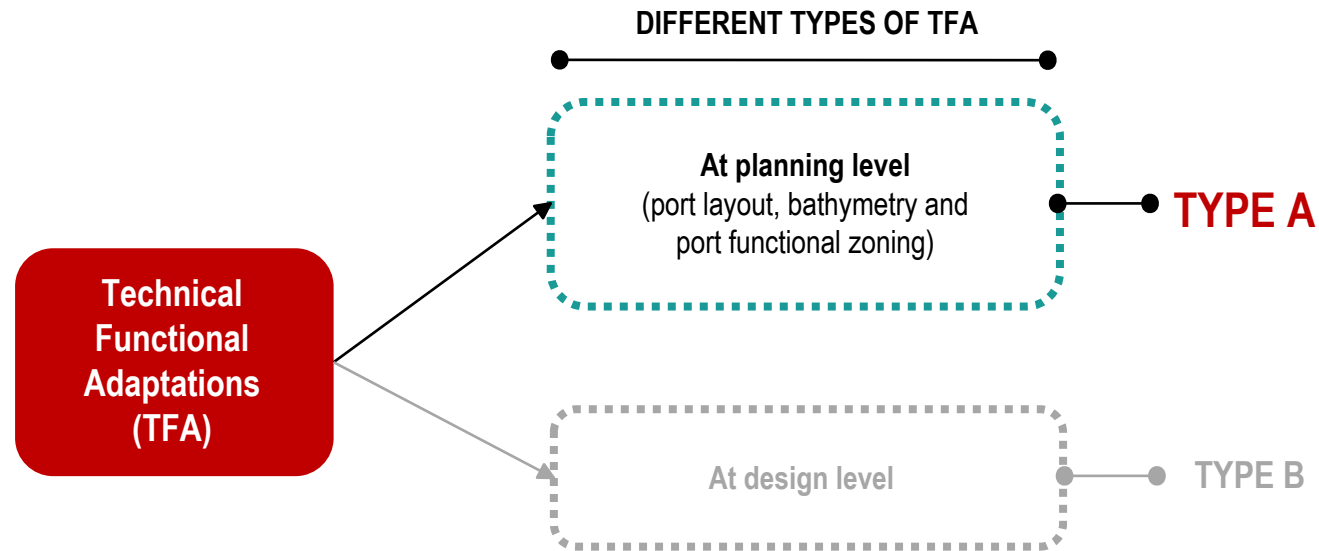
Mitigation of climate change



Transition towards a circular economy



### 3. Typological classification of TFA



For TFA of Type “A” it is reported:

- a short definition
- a description of its main contents, together with practical examples and useful hints for the drafting of the TFA
- when relevant, references to specific SDGs and to the macro environmental sustainability objectives outlined in “EU Regulation 2020/852”

## Typology 1

### Non-substantial changes in the layout of external works



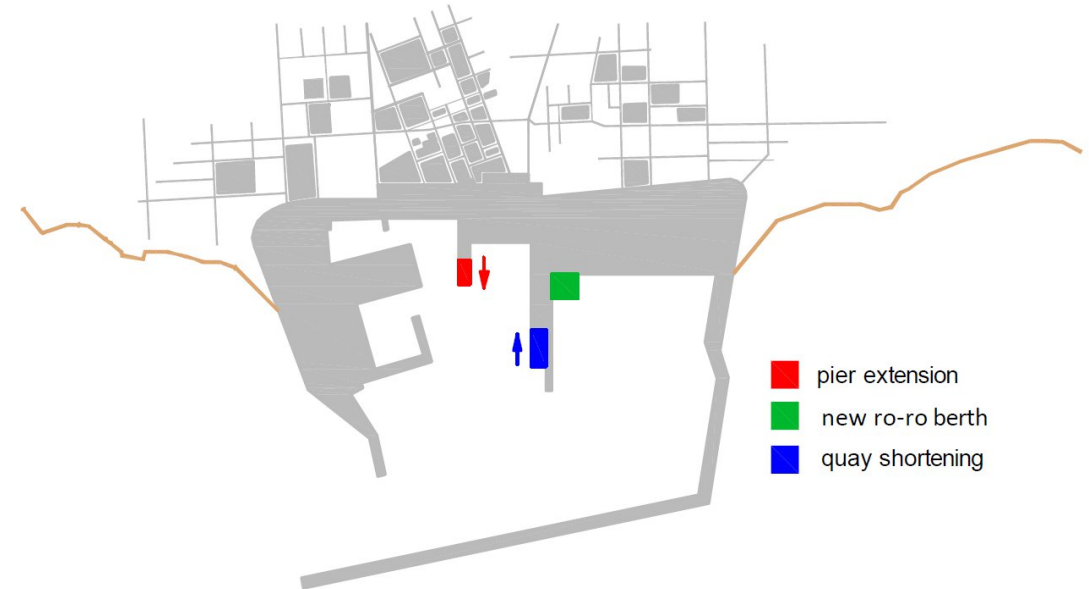
- **recalibrations** of the layout of the approach channel and of the breakwaters
- these TFA can be necessary if a **new “project ship”** is envisaged
- TFA belonging to this typology can be proposed in order to improve navigation safety, too



Transition towards a circular economy

## Typology 2

### Non-substantial changes in the layout of inner works

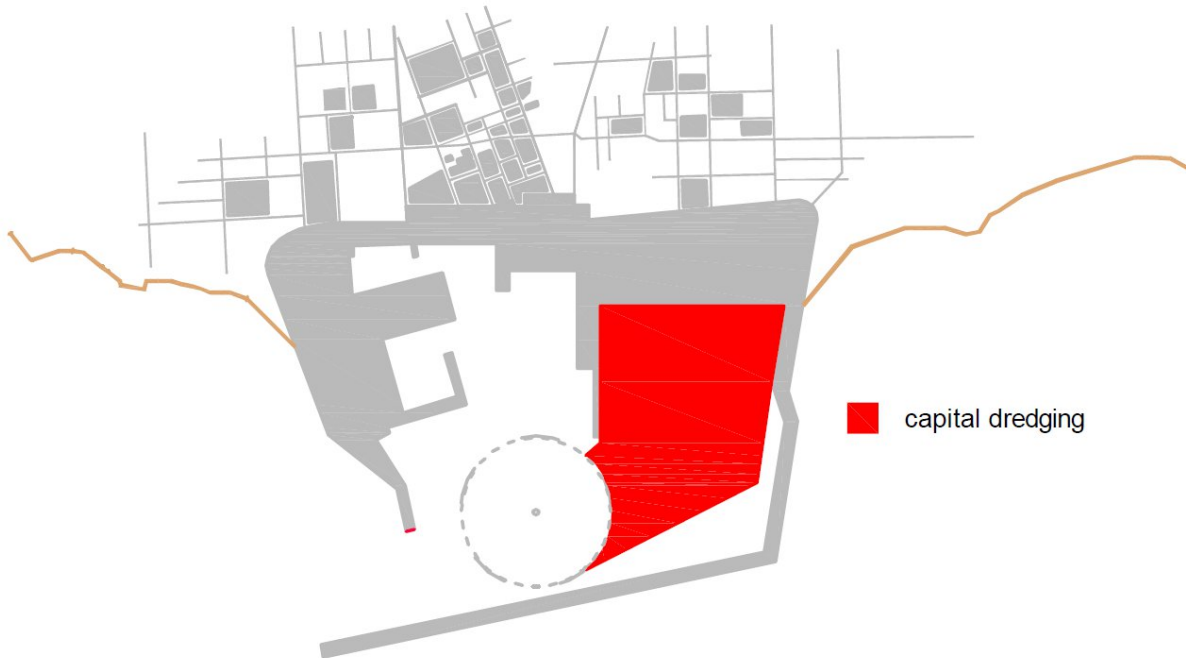


- **recalibrations** of the layout of inner works of the port
- the recalibration **must not modify the general layout** of the port masterplan
- these TFA can be necessary if a **new “project ship”** is envisaged
- TFA of this typology may require, among other aspects, in-depth analysis of geotechnical and structural aspects



### Typology 3

#### Non-substantial changes in port depths



- changes that may affect the approach channel, the evolution basin, docks and, indirectly, the related quay structure
- the **recalibration must not modify the general layout** of the port masterplan
- these TFA can be necessary if a **new “project ship”** is envisaged, with higher draft



Transition towards a circular economy

### Typology 4

#### Non-substantial changes in port layout for the planning of a new dredged material disposal facility



- **recalibrations** of the layout of the approach channel and of the breakwaters
- necessity of **assuring a proper disposal site** to both capital and maintenance dredging. TFA of this typology can deal with it
- the assignment of a specific function in this new port operational area should be considered as a “variant”



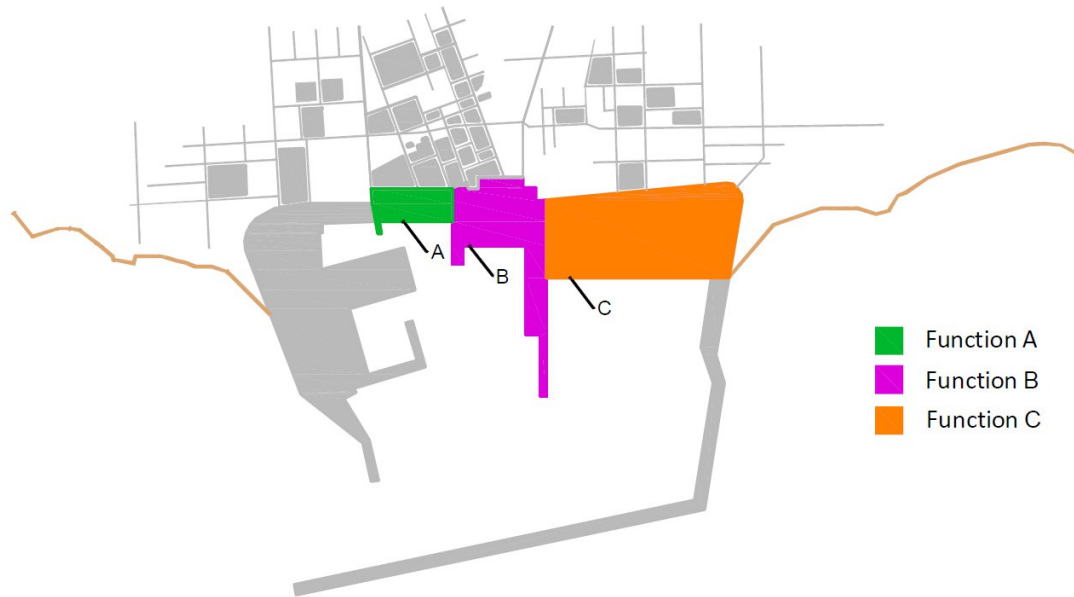
Transition towards a circular economy

## Typology 5

### Non-substantial changes in the functional characterization of specific port areas

#### 5.1 Non-substantial functional change in an “old” port masterplan

Port masterplan in force



TFA



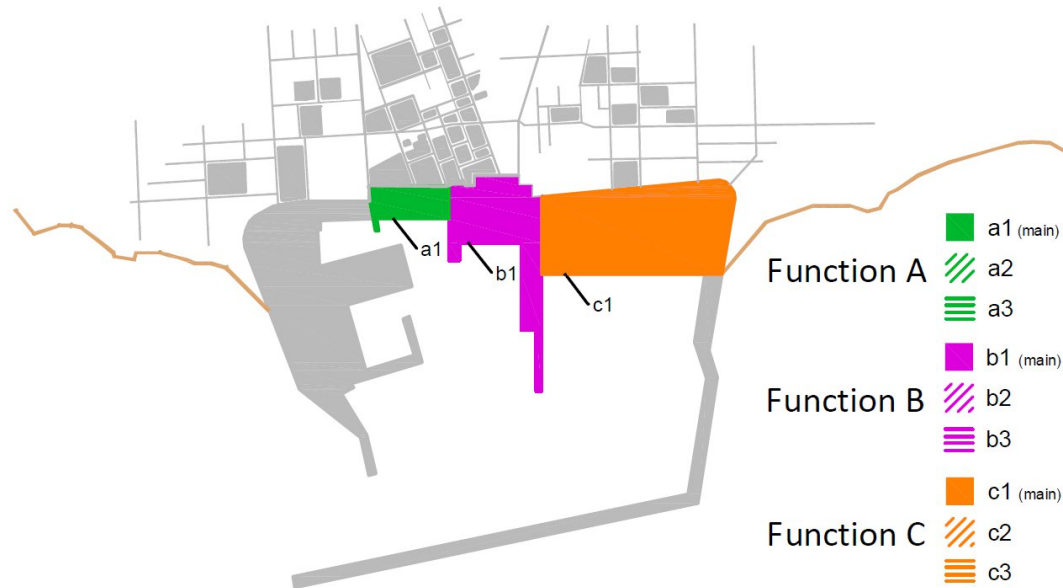
- the necessary conditions for the **admissibility** of these TFA are:
  - a) the **non-substantiality of the functional change introduced** in the specific port area (B\*)
  - b) the **compatibility between the new function and the functions of the adjacent port areas** (A and C)
  - c) the **non-relevance of the functional change from an environmental point of view**
- in case of abandoned port areas (and then, without a function anymore), TFA deal with the assignment of a new function as well. But, in this specific case, the necessary conditions for the admissibility of these TFA are b) and c) (above mentioned)

## Typology 5

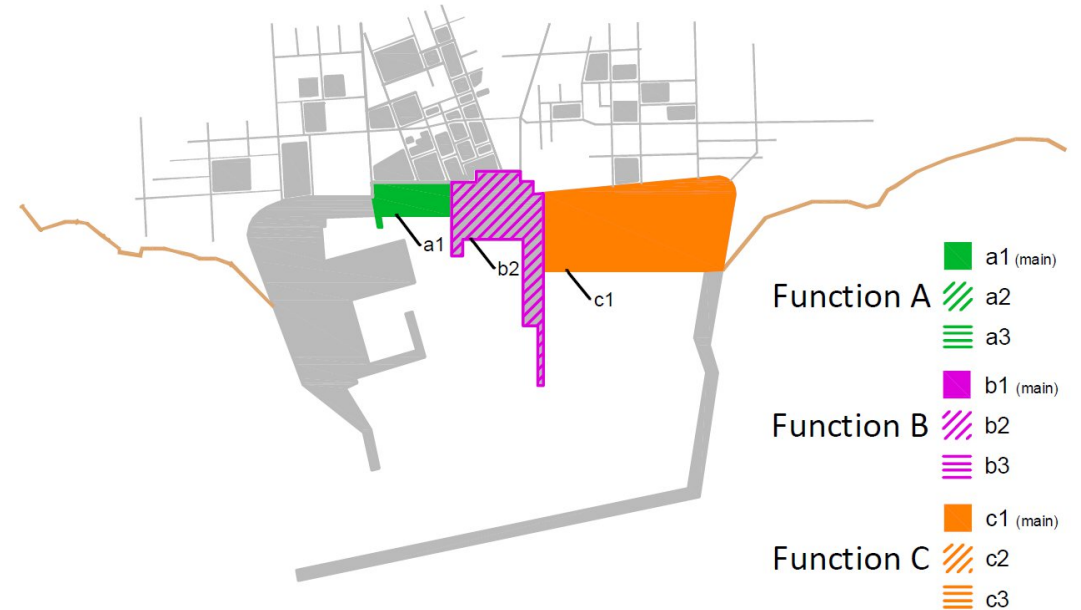
### Non-substantial changes in the functional characterization of specific port areas

#### 5.2 Non-substantial functional change in an “updated” port masterplan

Port masterplan in force



TFA



- these TFA deal with the **assignment of a new function** in a specific port area, characterized by a family of compatible functions
- the new function belongs to that family, being one of the “compatible alternative functions”
- for these TFA, the necessary conditions of typology 5.1 are already implicitly satisfied

## Typology 5

### Non-substantial changes in the functional characterization of specific port areas

#### 5.3 Re-perimeterization of adjacent port areas

Port masterplan in force



TFA



- these TFA deal with the **potential necessity of re-perimeterization of adjacent port areas**, in order to give a timely answer to the changing needs of port traffic with time
- original functions of port areas are maintained

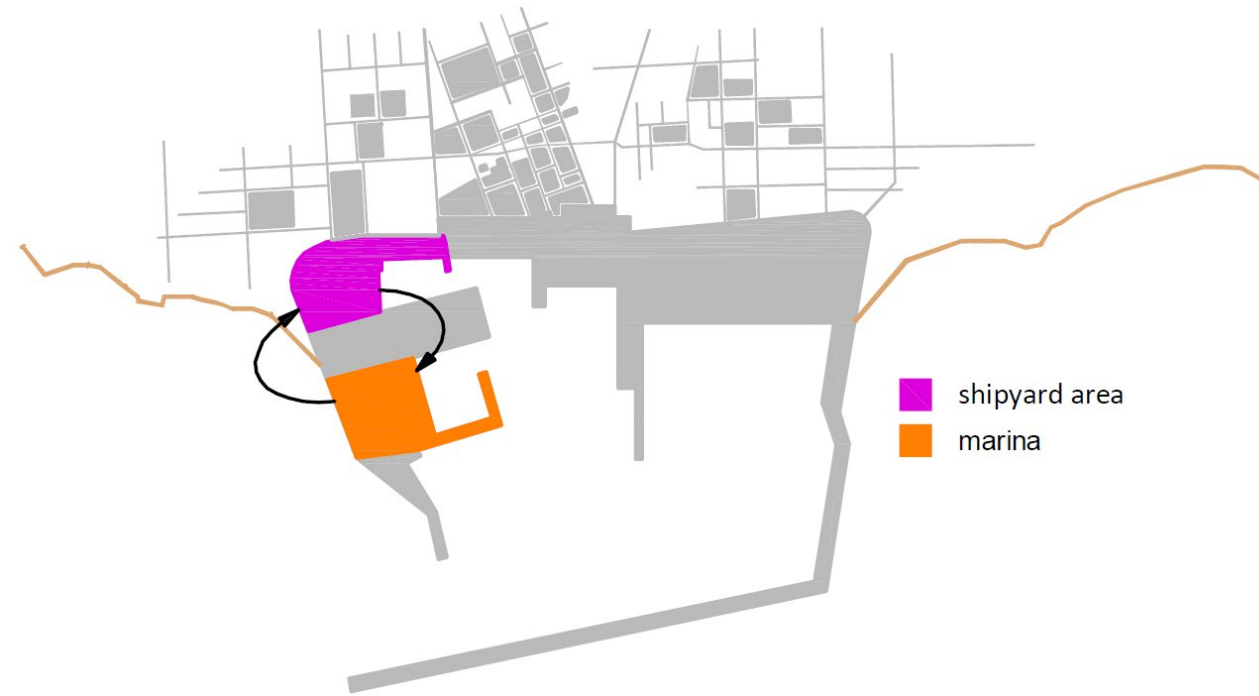
## Typology 5

### Non-substantial changes in the functional characterization of specific port areas

#### 5.4 Inversion of functions in specific port areas

*Port masterplan in force*

*TFA*



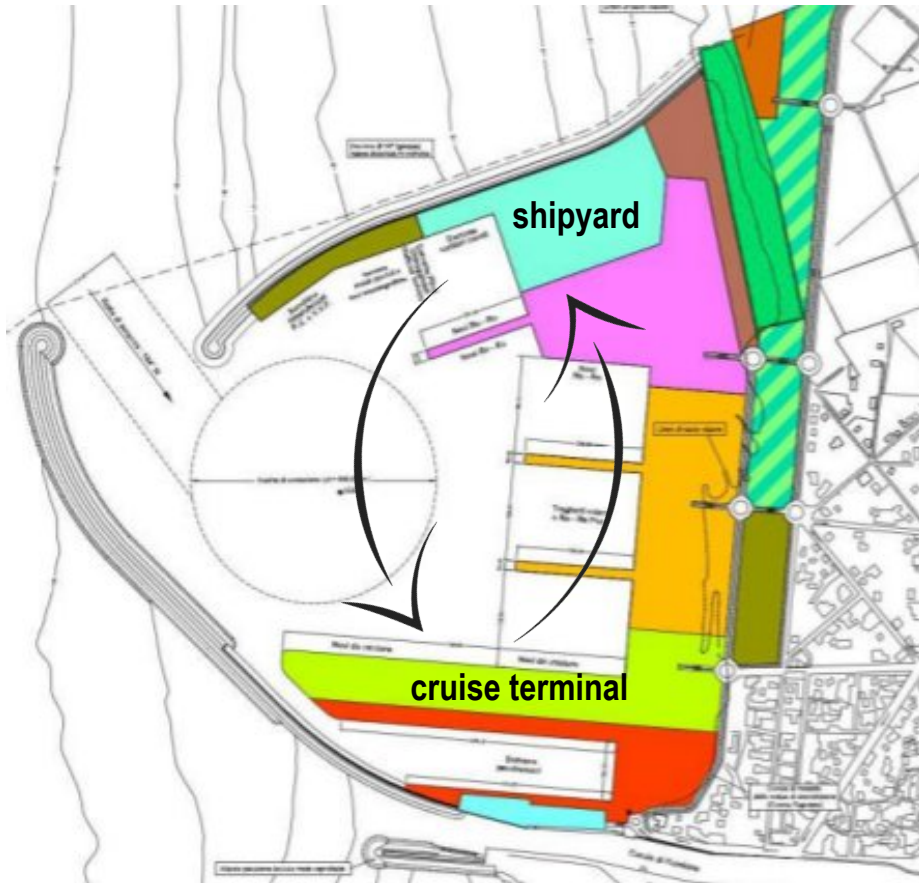
these TFA deal with the **potential necessity of exchanging functions** (when possible) in specific port areas, due to emerging needs

Typology 5.4

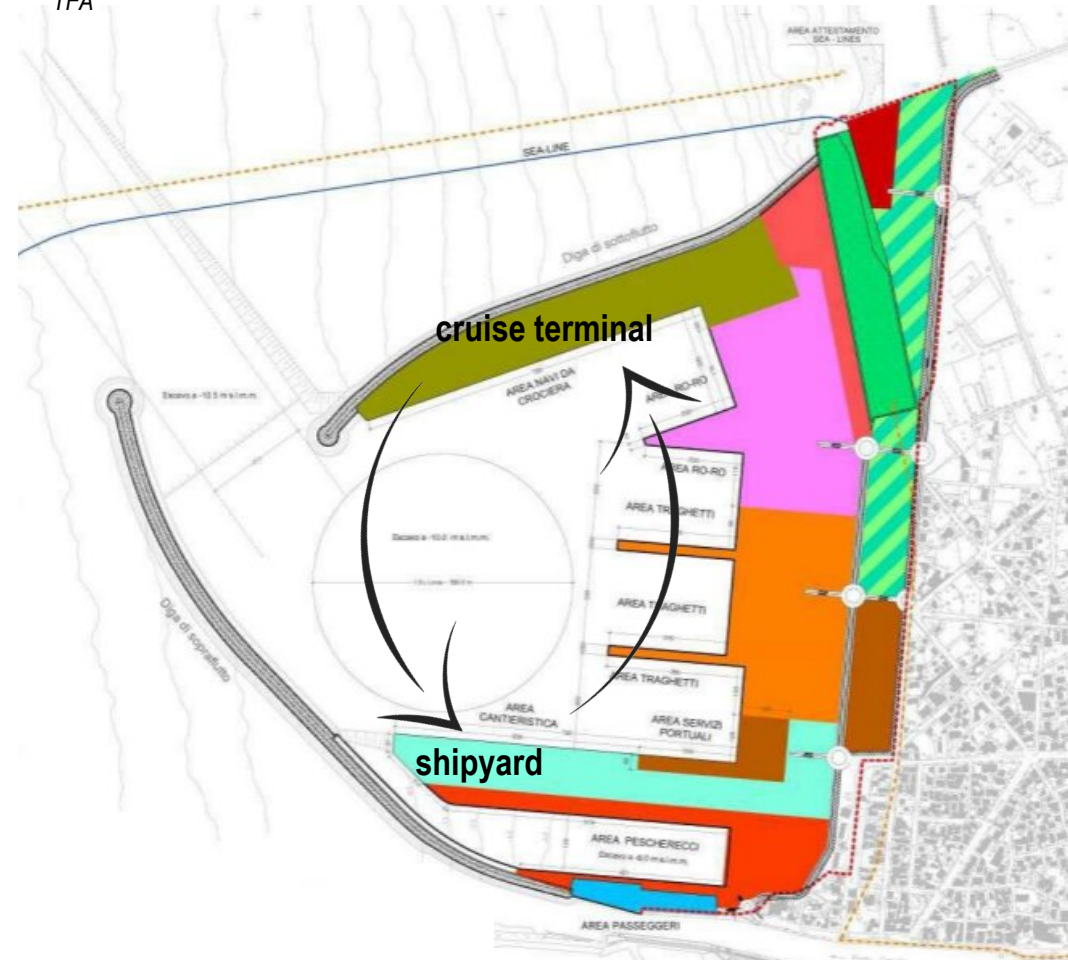
Inversion of functions in specific port areas

- Fiumicino – Italy – Inversion of functions: cruise terminal and shipyard

Port masterplan in force

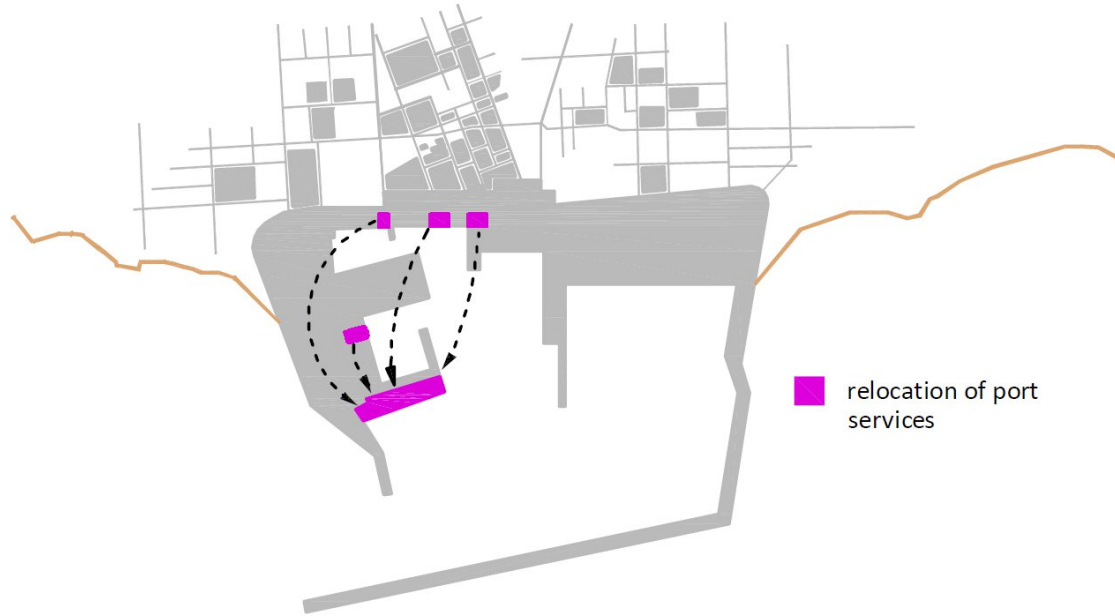


TFA



## Typology 6

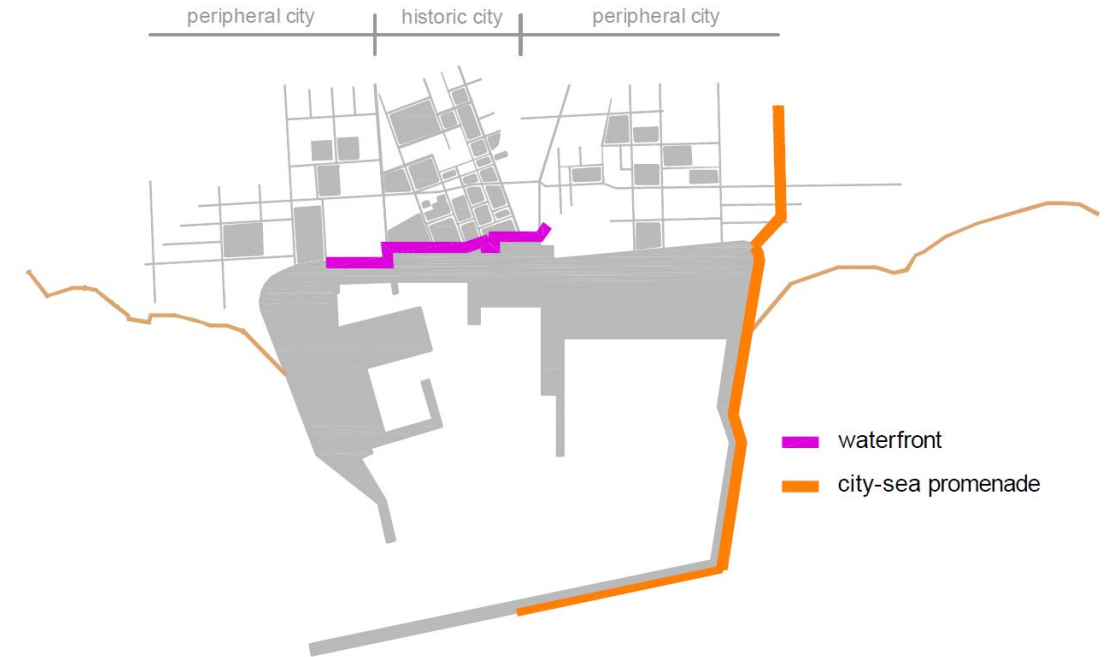
### Relocation of port services (service boats berths, control tower...)



these TFA deal with the **potential necessity of relocate port services**

## Typology 7

### Waterfront redevelopment



- these TFA deal with non-substantial changes that affect specific port areas, belonging to **port-city interaction domain**
- **for improving the use and the quality of urban places**, as well as pedestrian accessibility from the core of the urban area
- the elements that contribute to the improvement of the port-city interaction domain are «**city-sea promenades**» and «**waterfronts**».

# Typology 7

## Marina di Carrara TFA – Italy – Promenade on breakwater





## Typology 7

- Marina di Carrara TFA – Italy – Promenade on breakwater



● Marina di Carrara TFA – Italy – Promenade on breakwater

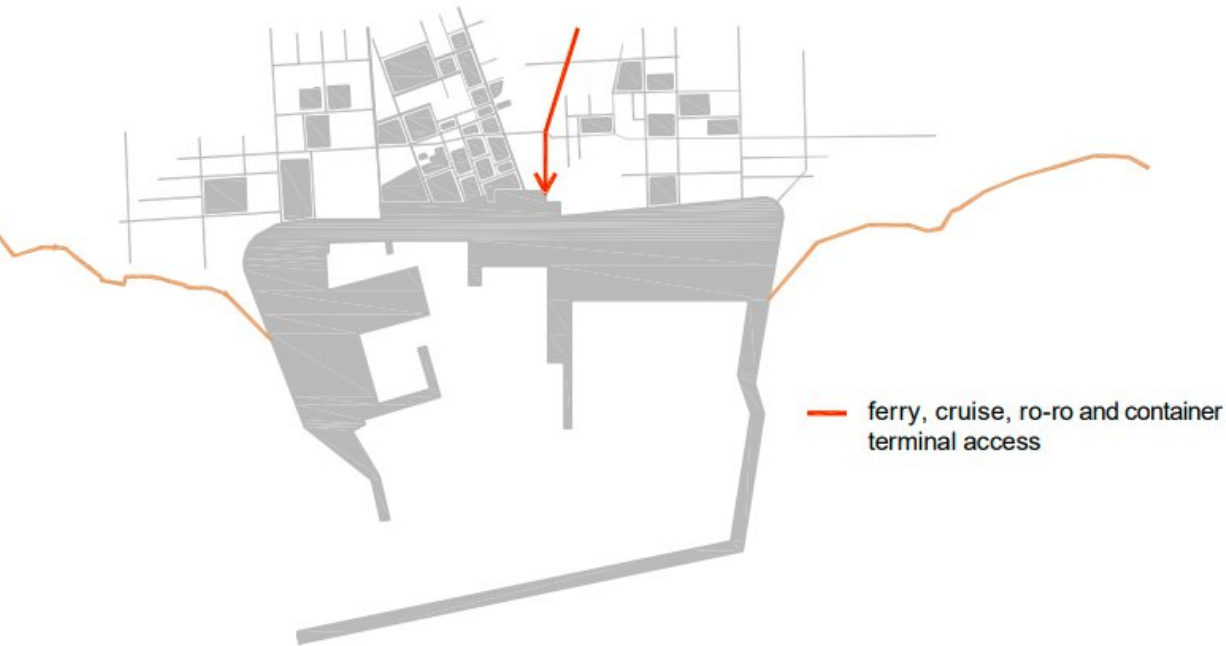


## Typology 8

### Non-substantial modification of rail/road last mile connection

Port masterplan in force

TFA

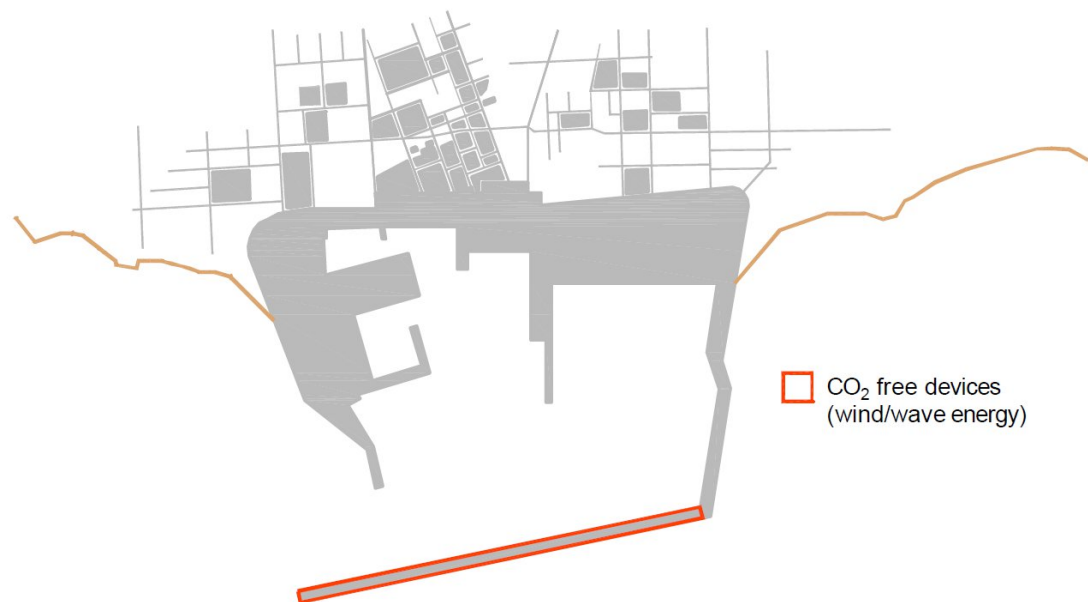


these TFA deal with non-substantial modifications to the **last mile connections** between the port and the local territory, in order to **improve the conditions of efficiency and safety** of the connections themselves.



## Typology 9

### Non-substantial changes in the energy planning of the port masterplan



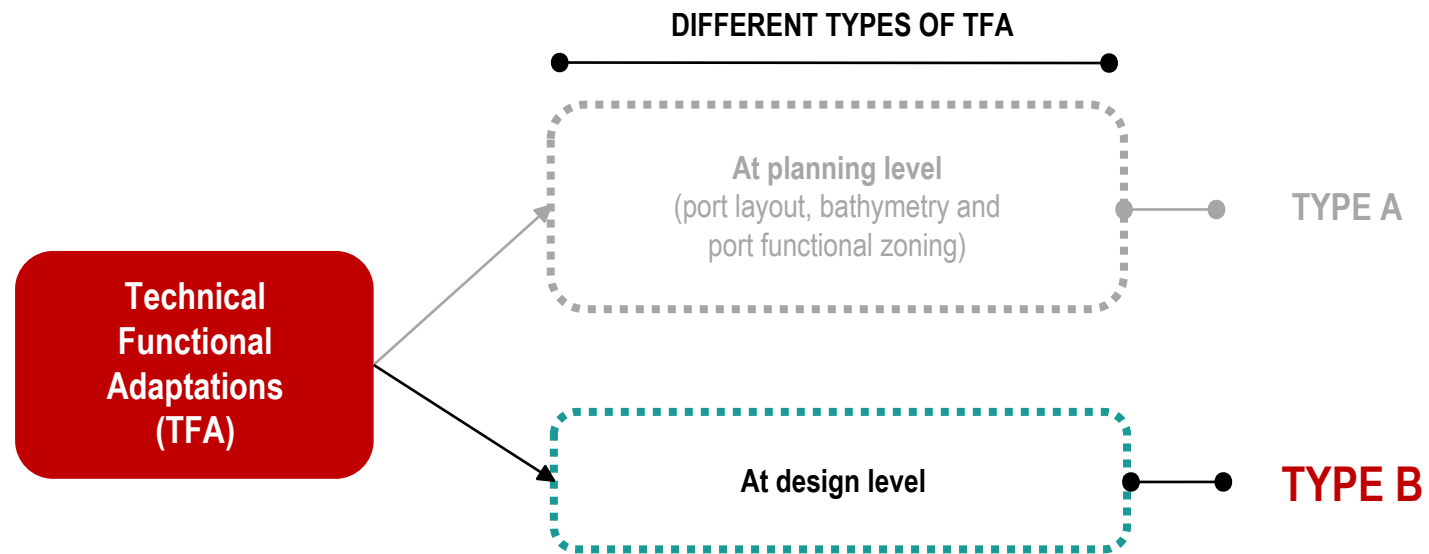
the basic condition for the application of these TFA is that port masterplan faces issues of energy planning of the port, both in terms of **efficiency** and in terms of implementation of **renewable energy devices**.



Clean and accessible energy



Mitigation of climate change



Regarding **technical functional adaptations of type b** (which are not regulated by a specific law) they are faced only at design level, as already underlined.

Therefore, they do not affect the contents of the port masterplan.

Among them, just to give **some practical examples**:

- quay renovation
- non-substantial changes, in order to face climate change (within the main goal of climate change adaptation)
- temporary works in order to increase port efficiency in some periods of the year

## 4. Conclusions



The described typological classification for TFA may represent **a common methodological basis for a coherent drafting of proposals regarding TFA**. At the same time, related technical-administrative procedures for the approval of TFA could be **more efficient, less time consuming**.

Whenever possible, conceptual relationships between TFA and the sustainable development objectives of the UN 2030 Agenda and the environmental objectives of the EU Regulation 2020/852 have been highlighted.



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**Thank you for your attention.  
Merci de votre attention.**