



# Flattening the major oil spill response disposal resources deployment: A case study of China

Jiang Yao, Cao Wei, Wang Yaobing, China Academy of Transportation Sciences, jyjiangyao@126.com

## 0 Introduction

Emergency resources deployment is an important part of the emergency command. The resources deployment means when an oil spill accident occurred, the commander direct all of the resources gathering to the spill site. So the commander should know what kind of equipments and resources should be use, where can I get them, who have these resources, etc.

Especially the major marine oil spill, which response should organized by the national level department, it would be involves many different industries and many level of departments, the commanders are facing multiple difficulties and problems.

Thus, the oil spill emergency command levels should be compressed, the deployment of resources procedures should be simplified, to achieve rapid deployment of resources. In order to provide reference for the emergency command in major oil spill response.

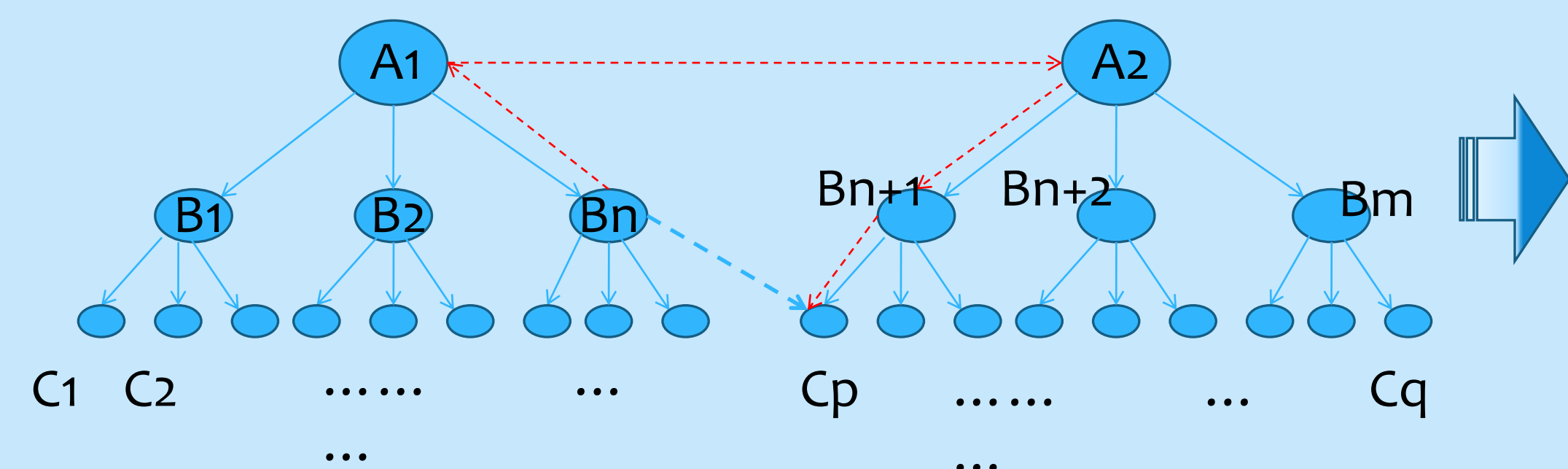
## 1 Background

The oil spill response disposal resources system are **complex**.

- The owner of the resources: different level of government departments, port companies, petrol companies, clean up companies, etc.,
- The industry involved: Maritime, Oceanic and Fishery, Salvage, Environmental protection, etc.,
- contents of different categories: Human resources, material resources, financial resources, technological resources, information resources, services resources, etc.

## 2 Question Statement

Suppose that each structure represent one industry, like A1 system is MSA (Maritime Safety Administration), A is the national level, B is province level, C is city level. And A2 system is another industry, suppose it is Oceanic and Fishery department.



Currently, the department Bn want to use the resources of Cp, they should have at least 4 steps. The question is how can they deploy the resources only by **one step**?

Fig.1 Question statement of oil spill response resources deployment

## 3. Theory should be applied: Flat management

➢ What is flat management?

"Flat management" is contrast to the traditional hierarchical structure, which means the organization or structure compress the hierarchy level, and expand he span of command, the command information could be shared in a same layer of the information flow. Use this theory in the response resources deployment, a wider margin could be commanded, the commander would have more centralized the power, to deploy a wider range of resources. Flattening theory is currently used in business management and military command.

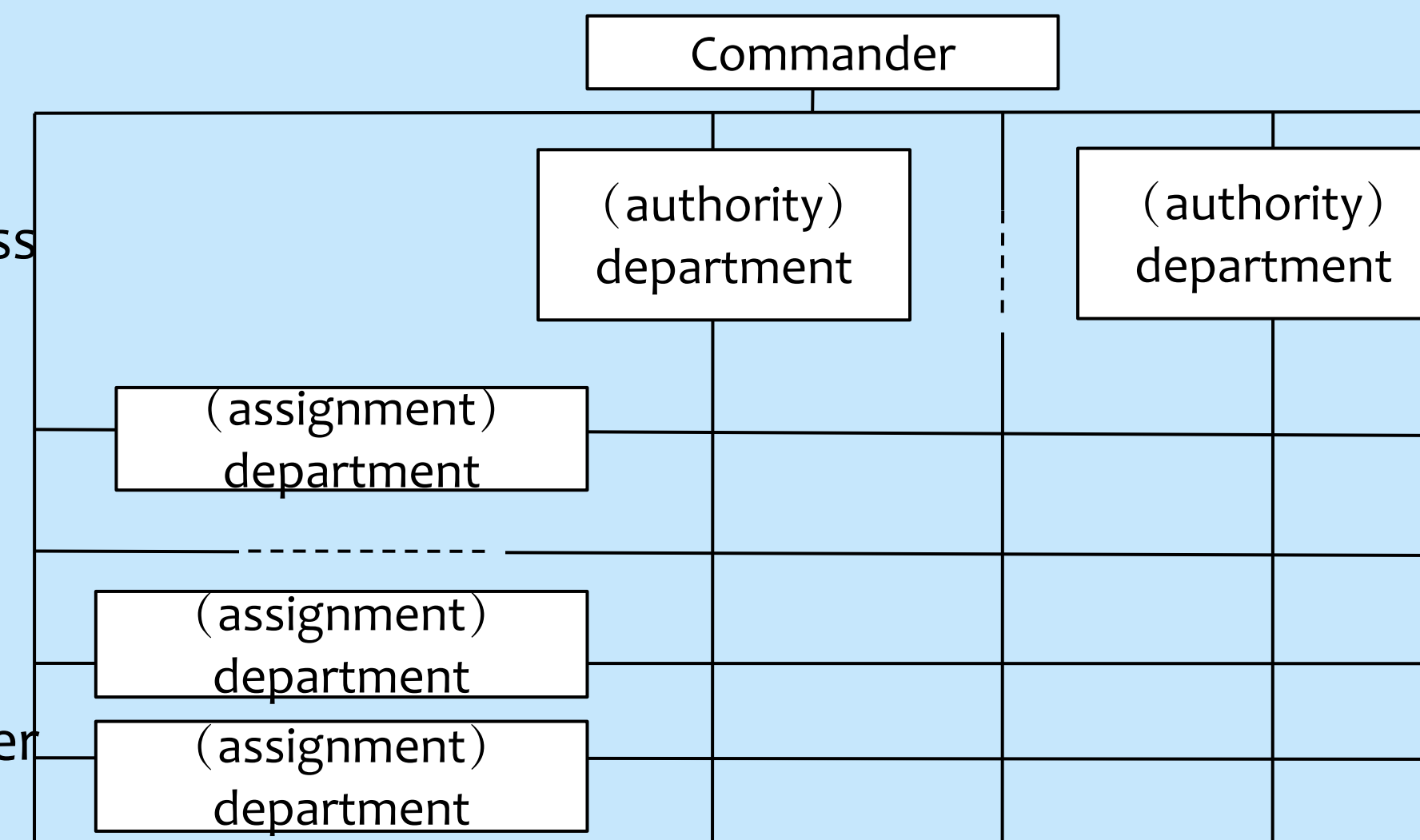


Fig.2 Matrix flat command structure

➢ The flat structure have several patterns, the figure 2 is a matrix flat structure.

## 4. Case Study—China major oil spill response disposal resources deployment

### 4.1 China oil spill response management

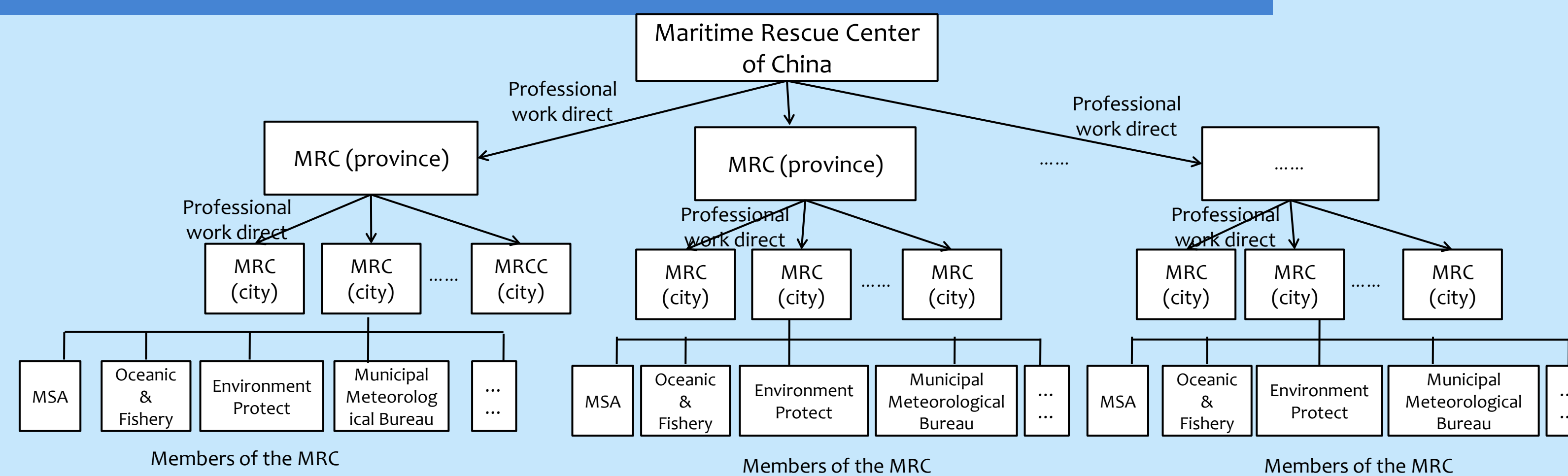


Fig.3 The regular ship oil spill response management system

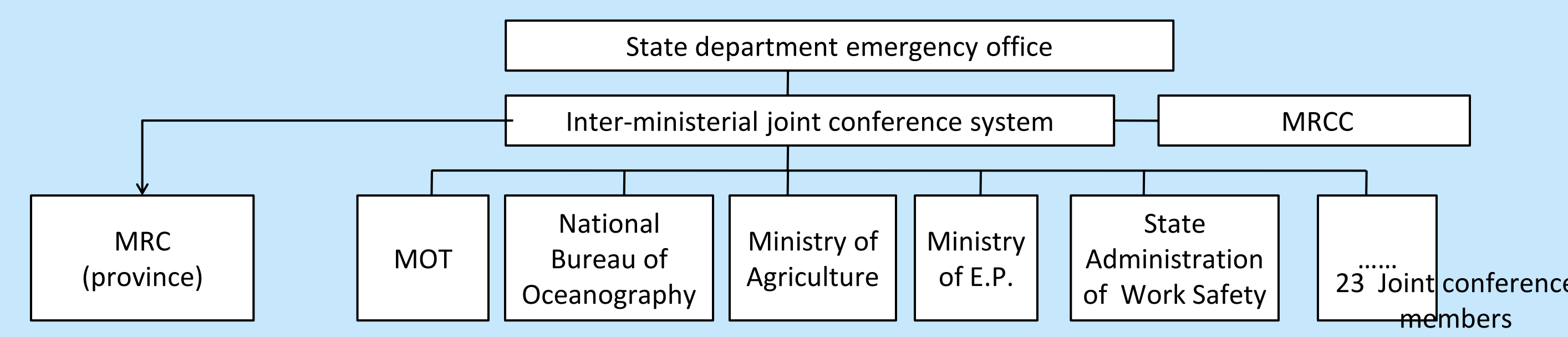


Fig.4 The significant oil spill response emergency command system

### 4.2 The optimize of China major oil spill response command system

On the premise of:  
✓ Information is transmitted on a unified platform.  
✓ the members should have the consensus collaboration in advance.

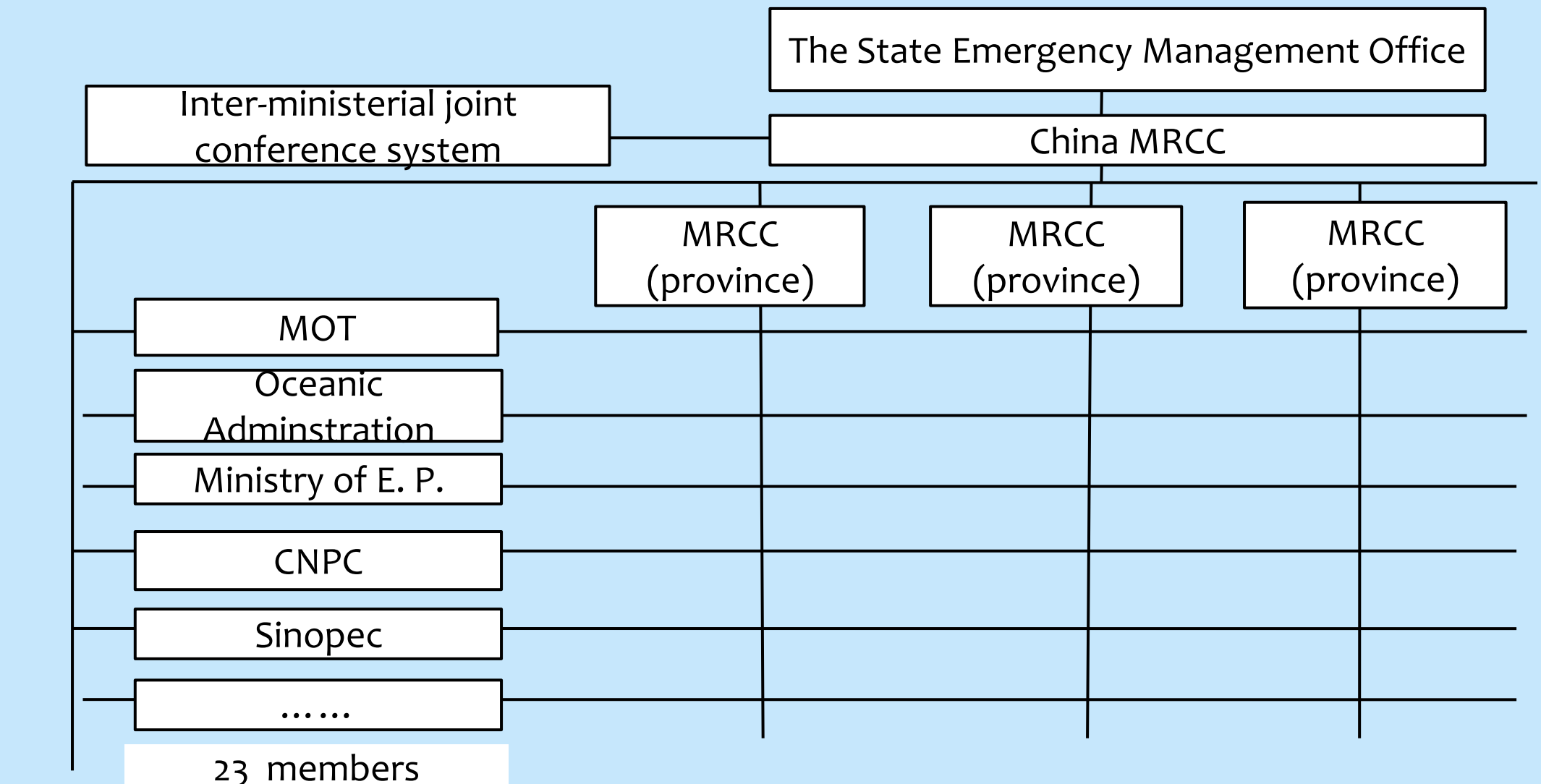


Fig.5 The optimized China oil spill response command system

### 4.3 China major oil spill response disposal resources deployment mode

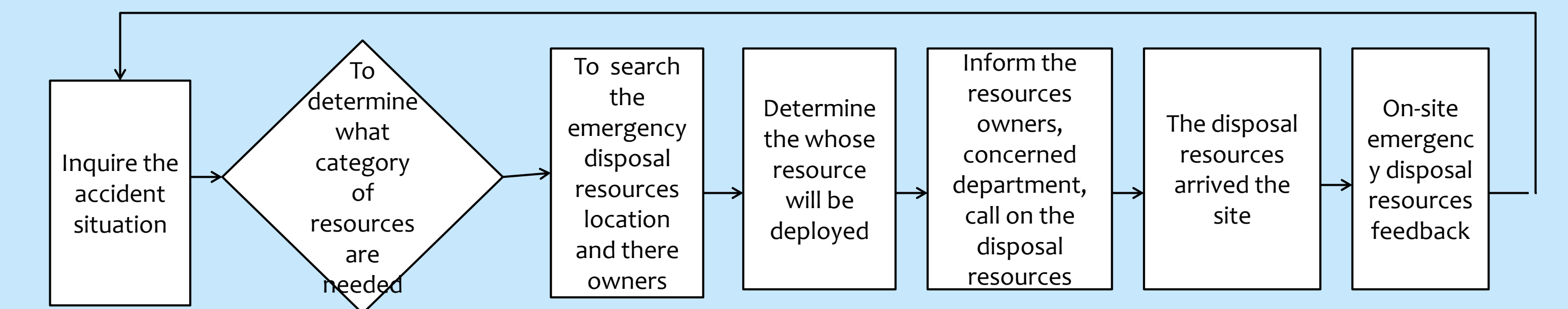


Fig.6 The oil spill response disposal resources deployment procedure

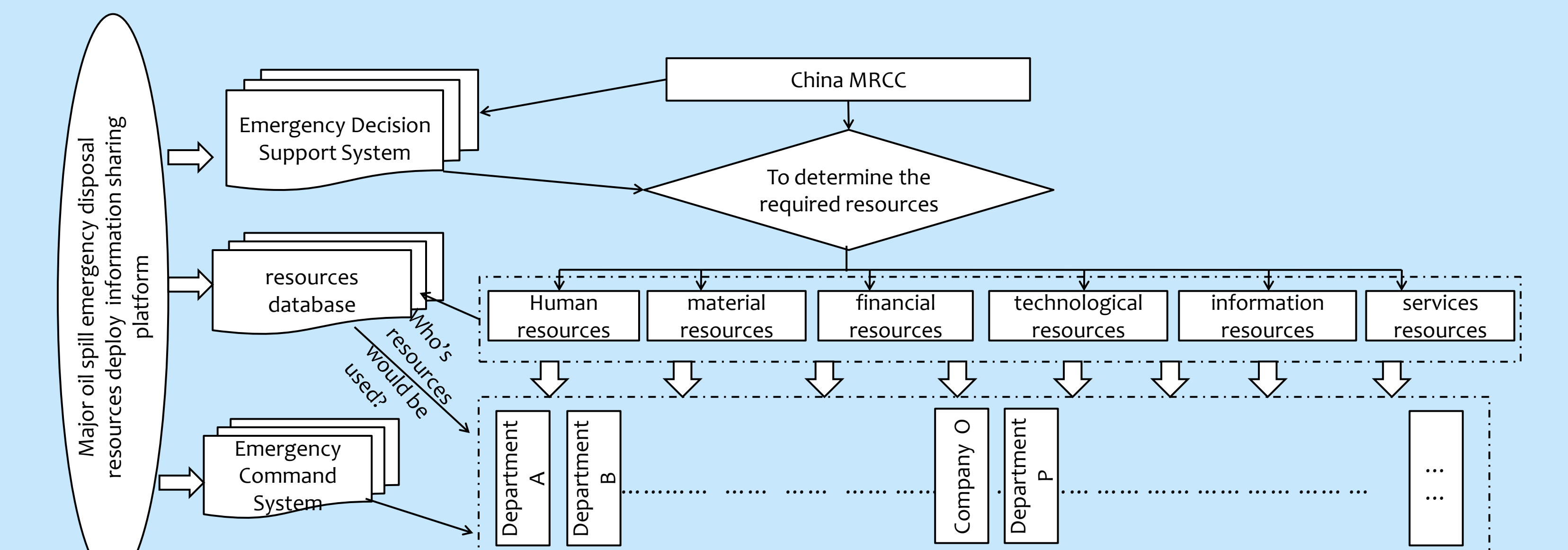


Fig.7 China major oil spill response disposal resources deployment mode base on the optimized command system

## 5 Conclusion

Deployment of major marine oil spill response resources is a key part of emergency response. The deployment process and the transmission of information reached flattening effect, by flat the command and use information and intelligence technology. In order to achieve fast, timely and accurate deploy the resources to the scene of the accident.