

Implementation of the Indonesia National Policy for Crew Certification of Non-Convention Fishing Vessel after the ratification of STCW-F 1995 (case study in Central Java Province of Indonesia)

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Abstract. International regulations that can be used as standards by countries regarding the competence of fishing vessel crews are the 1995 IMO Standard of Training, Certification, and Watchkeeping for Fishing Vessel Personnel (STCW-F) regulations, which contain the minimum knowledge and skills possessed by the fishing vessel crews. STCW-F 1995 applies to ships measuring 24 m in length and above, hereinafter referred to as convention fishing vessels. Meanwhile, for ships measuring less than 24 m in length or referred to as non-convention fishing vessels, the state must regulate the competence with adjustments that refer to the norms in STCW-F 1995. The Indonesian government has ratified STCW-F 1995 based on Presidential Regulation Number 18 of 2019 concerning the ratification of the implementation of STCW-F. The research aims to identify national regulations relevant to the STCW-F 1995 in order to assess the readiness of fishing port authorities in Central Java to implement regulations for the crew certification of non-convention fishing vessels. The method used in this research is a case study on non-convention fishing vessels in Central Java Province. The data on national regulations related to the crew certification system of fishing vessels were obtained through literature review. Meanwhile, perception data collection was carried out through in-depth interviews with fishing port authorities to gain perceptions of the implementation of existing national policies. The perceptions gained from the results of a survey regarding the readiness to implement Minister of Marine Affairs and Fisheries Regulation number 33 of 2021 by fishing port authorities in Central Java are generally lacking or not yet effective. To overcome this, an appropriate strategy is needed to increase the effectiveness and efficiency of implementing the policies of the certification for non-convention fishing vessel crew.

Key Words: competence, certification, fishing vessel crew, policy.

Introduction. Fisheries management cannot be separated from the management of human resources, especially in fishery vessel crews who have "3d" work characteristics, namely: dangerous, dirty and difficult. The high accident rate of fishing vessel crews in the world, which reaches 80 people per 100000 crew members, requires more serious attention to set minimum standards of knowledge and skills for fishing vessel crews (Suwardjo et al 2010). Fishing activities at sea are highly risky because fishing vessels operate in all water conditions, from calm to dangerous sea waters. In addition, in the current, free market era in the Asia Pacific region, one of which is the ASEAN Economic Community (AEC) which took effect in January 2016, matters relating to skills and competency requirements to work on fishing vessels are now a major concern (Nurani et al 2017).

The FAO Convention, namely the Code of Conduct for Responsible Fisheries (CCRF) of 1995, has provisions that explain the importance of responsibility for the safety of fishermen and fishing vessels. Chapter 8 states that each country must implement health and safety standards for all people working in fishing operations (Purwangka et al 2018). The required standards are fishing vessel and fishing gear standards, fishing vessel

manning standards, fishing operation standards, and labor standards on fishing vessels. These standards must be adjusted to the size of the ship, the main engine power, the shipping area, and the fishing technology used. These standards must be no less than the minimum requirements of international agreements relevant to conditions of work and services for workers (Purwangka et al 2013; Purwangka et al 2018). International regulations that can be used as standards by countries regarding the competence of fishing vessel crew are: the International Maritime Organization (IMO) of Standard of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F) regulations 1995, which contain the minimum knowledge and skills that crew members must possess and fishing vessel standards; safety equipment standards are based on the Torremolinos International Convention for the Safety of Fishing Vessels.

International regulations that can be used as standards by countries regarding the competence of fishing vessel crews are the 1995 IMO Standard of Training, Certification, and Watchkeeping for Fishing Vessel Personnel (STCW-F) regulations, which contain the minimum knowledge and skills possessed by the fishing vessel crews. STCW-F 1995 applies to ships measuring 24 m in length and above, hereinafter referred to as convention fishing vessels. Meanwhile, for ships measuring less than 24 m in length or referred to as non-convention fishing vessels, the state must regulate the competence with adjustments that refer to the norms in STCW-F 1995. Indonesia has referred to the quality test standard for the certificate of competence of fishing vessel crew according to STCW-F 1995 mandate from the International Maritime Organization (IMO) since 2005, with the issuance of the Minister of Transportation Regulation Number 9 the Year 2005 concerning Education and Training, Examination and Certification for Fishing Vessel Crews. However, in practice, the competency certificates for fishing vessel crews in Indonesia do not currently have competency certificate qualifications by applicable laws and regulations (>90%), so this becomes one of the triggers for IUU fishing to occur in Indonesia (Budiman et al 2016).

The current inconsistencies in implementing the Certification System for Fishing Vessel Crews are suspected to be due to overlapping regulations related to the certification of fishing vessel crews. As stated by Afrieansah et al (2021), the harmonization of regulations in Indonesia needs to be done to implement the STCW-F 1995 comprehensively. Therefore, it is necessary to conduct research to improve the effectiveness and efficiency of implementing the crew certification policy for non-convention fishing vessels in Indonesia following the mandate of Government Regulation Number 27 of 2021 concerning the Implementation of the Marine and Fisheries Sector (PRI 2021), which refers to Law Number 45 of 2009 concerning Amendments to Law Number 31 of 2004 concerning Fisheries (PRI 2009). The research aims to identify national regulations that are relevant to the STCW-F 1995 in order to assess the readiness of fishing port authorities in Central Java to implement regulations for the crew certification of non-convention fishing vessels.

Material and Method

Description of the study sites. The study was conducted in Central Java, Indonesia, from June to September 2022. Sampling was conducted at the coastal fishing ports of Paty Regency and the Archipelagic fishing port in Pekalongan City.

Data collection. The method used in this research is a case study on non-convention fishing vessels in Central Java Province. The data on national regulations related to the crew certification system of fishing vessels were obtained through a literature review.

Meanwhile, perceptions data collection on the implementation of existing national policies was carried out through in-depth interviews with fishing port authorities. The purposive sampling technique was used to determine the respondents to be interviewed (Sugiyono 2009). Respondents consisted of harbour masters, heads of fisheries ports or officials who could represent them, and owners of non-conventional fishing vessels at the research locations. Respondents who were interviewed were 25 people, consisting of 20 ship owners, 2 harbour masters, and 3 heads of fishing ports or officials who could represent them.

Data analysis was carried out descriptively with qualitative methods using content analysis, which was presented as a descriptive and matrixed document (Eriyanto 2011). Readiness for policy implementation was assessed through in-depth interviews (Nababan et al 2017) with fisheries port authorities in Central Java, and the results of the interviews are presented in the form of graphs.

Results and Discussion

The Convention Mandate of 1995 STCW-F for the Certification of Fishing Vessel Crew in Indonesia. The International Maritime Organization (IMO) makes international rules that are used as benchmarks by countries all over the world to regulate the skills of ship crews. The STCW-F 1995 is one of the IMO's rules about training, certification, and security for fishing vessel crews. It lists the minimum knowledge and skills that crew members must have. However, STCW-F 1995 only regulates and applies to fishing vessels with a length of 24 m and above, or what is referred to as "convention fishing vessels". Meanwhile, for fishing vessels with a length of less than 24 m or "non-convention fishing vessels", the state concerned is obliged to regulate with adjustments referring to the norms in STCW-F 1995.

The feasibility of Indonesian human resources in the field of capture fisheries, especially vessel crews, has been regulated in several regulations that have been established and enforced by the Indonesian government prior to the ratification of STCW-F 1995, including Minister of Transportation Regulation Number 9 of 2005, which covers education and training, examinations and certifications for fishing vessel crew. For fishing vessel crews, there are two main types of Certificate of Competency (CoC): fishing vessel technical competency for mechanical officers and fishing vessel nautical competency for deck officers. The quality test standard for the certificate refers to the 1995 IMO STCW-F standard. The authority for manning fishing vessels is based on four main factors, such as gross tonnage (GT), ship length, shipping operation area, and the power of the ship's propulsion engine.

The Indonesian government is very committed to the STCW-F 1995 International Standard. This is evident from the fact that Presidential Regulation Number 18 of 2019 (PRI 2019) ratified STCW-F 1995. Indonesia has signed the STCW-F convention, which aims to: get international recognition of the certification of fishing vessel crews issued by the Indonesian government with wages and benefits based on competence; make fishing vessel crews more competitive by improving education and training standards, which can lead to more job opportunities on the international job market; and give the Indonesian government a legal way to set up equal pay for equal work, ensure the safety of life at sea, optimize the management of fishing vessel crewing, provide legal protection for fishing vessel crews who work on fishing vessels of other countries; and improve shipping navigation safety.

Condition of Non-Convention Fishing Vessel Crews prior to the ratification of STCW-F 1995. For the safety of shipping fishing vessels and operating fishing gear and for obtaining good fishing productivity, it is necessary to increase the competence of human resources for fishing vessel crews through education and training specifically certified for marine fisheries. Mastery of competence must be possessed in the safety of navigation, control, and operation of fishing vessels, ship machinery, and electrical and fishery electronics. Education and training must be in accordance with the qualification standards of the crew of fishing vessels for deck and engine parts. The qualification standard for the deck section is determined based on the length and/or gross tonnage of the fishing vessel's operating area, position structure, and certificates required by the fishing vessel. The qualification of the engine part is determined based on the thrust of the fishing vessel engine, the structure of the position, and the required certificate.

The current condition of fisheries' human resources in Indonesia, especially in the field of capture fisheries, has competencies that are not up to standard. Most fishermen have competence as fishermen based on knowledge and skills acquired from generation to generation (Nurani et al 2017). This condition is supported by the results of Budiman

(2017), which show that there are many Indonesian fishing vessel crews that do not yet have a competency certificate in accordance with the STCW-F 1995 convention, namely the Certificate of Competency in Nautics of Fishing Vessels (ANKAPIN) Class I, II and III Certificate of Competency for Deck Officer of Fishing Vessel Class I, II, and III for the deck section and the Certificate of Competency in Technics of Fishing Vessels (ATKAPIN) Class I, II, and III for engine parts (Certificate of Competency for Engine Officer of Fishing Vessel). The research results showed that there was a gap in the competency certification of fishing vessel crews in the Pekalongan Archipelagic Fishing Port and the Pati (Bajomulyo) Coastal Fishing Port, Central Java. The value of the gap ranges from 85% to 100% on fishing vessels with a size between 30 GT and 100GT, a length below 24 m, and a propulsion of 100 KW (75 HP) to 300 KW (225 HP). However, they are still obtaining a sailing permit from the harbor master, even though the crews of the fishing vessel do not meet the specified competency certificate standards, namely Class II ANKAPIN and Class II ATKAPIN.

On the other hand, many high school and college graduates have certificates of competence for fishing vessel crews. Nevertheless, they are not recognized nationally or internationally, and, as a result, they do not get salaries and facilities according to competence. This is because the Ministry of Marine Affairs and Fisheries, as the authority that grants sailing permits to Indonesian fishing vessels, allows them to sail even though all crew members do not have a competency certificate according to the required standards. This often occurs in fishing vessels that have a length under 24 m or in non-convention fishing vessels. This is the main source of gaps or problems in implementing the Minister of Transportation Regulation Number 9 of 2005 concerning Education and Training, Examination and Certification of Crews for Fishing Vessels (KEMENHUB 2005).

Scope of certification of fishing vessel crew after the ratification of STCW-F 1995 in Indonesia. The latest regulation on the Certification System for Crews for Fishing Vessels in Indonesia is Government Regulation Number 27 of 2021 concerning the Implementation of the Marine and Fisheries Sector, which refers to Law Number 11 of 2020 concerning Job Creation and Law Number 45 of 2009 concerning Fisheries, which states that the certificate of fishing vessel crew consists of certificates of competency and proficiency. The certificate of competency consists of fishing vessel nautics, fishing vessel engineering, fishing master, and rating for fishing vessels. The certificate of skills for fishing vessel crew consists of basic safety training for fisheries (BST-F), fishing operations, fish handling skills, fish storage refrigeration, fishing boat engine maintenance, and radio operators. Government Regulation Number 27 of 2021 is the basis for the Ministry of Maritime Affairs and Fisheries in the preparation of a ministerial regulation for technical regulation.

Government Regulation Number 27 of 2021 concerning the Implementation of the Marine and Fisheries Sector explains the definition of fishing vessels, namely the types of fishing vessels in the form of trawler, large trawler, purse seiner, large purse seiner, troller, gillnetter, squid cast-netters, jig fisher, and tuna longliner. Other fishing vessels are fish transporting vessels, fish processing vessels, fishing training vessels, fisheries research/exploration vessels, or fishing operation support vessel and fish cultivation operation support vessels (PRI 2021).

Fishing vessels have fishing operation routes that refer to the Regulation of the Minister of Marine Affairs and Fisheries No. 18 of 2021. Fishing lanes are waters that are part of the fishery management area of the Republic of Indonesia and the high seas for the regulation and management of fishing activities using permitted and/or prohibited fishing gear. These routes include lane 1A: two nautical miles measured from the coastline outwards to the high seas and towards archipelagic waters; lane 1B: covers waters outside the Fishing Lane 1A up to 4 nautical miles; lane 2: waters outside Fishing Lane 1 up to 12 nautical miles; and lane 3: waters outside Fishing Lanes 1 and 2, including Indonesia's exclusive economic zone.

Indonesia made arrangements for the fishing vessel crew system after the ratification of STCW-F 1995. The technical regulations governing the certification of fishing vessel crews are Ministerial Regulation Number 33 of 2021 concerning the fishing log book,

monitoring on board fishing vessels and fish transport vessels, inspections, testing, and marking of fishing vessels, as well as management of fishing vessel crewing. These regulations were stipulated on August 18, 2021, and promulgated on August 25, 2021 (MMAF 2021). This regulation can be used strategically as an updated guideline for the implementation of a fishing vessel crew certification system in Indonesia. In Indonesia, the legal arrangement for classifying fishing vessels is based on their gross tonnage (GT) size, not on the length of the vessel. Therefore, it is necessary to make a general equation between the size of the ship's GT and the length of the ship. STCW-F 1995 has regulated that convention fishing vessel sizes are those having a length of 24 m and above. So, the Ministry of Marine Affairs and Fisheries says that any fishing vessel that is at least 24 m long is the same as any fishing vessel that is over 100 GT. Thus, in Indonesia, the non-conventional fishing vessel, or vessel with a length of under 24 m, is a fishing vessel measuring 100 GT or below.

Certification for crew members of non-convention fishing vessels is, in general, the same as for convention fishing vessels, but in a different class, namely: Certificate of Competency and Certificate of Proficiency. Analysis of the contents of several regulations related to manning fishing vessels and in-depth interviews with fishing port authorities revealed that there are two types of certificates of competency needed, namely: class III Deck Officer and class III Engine Officer. Meanwhile, the certificates of proficiency consist of Basic Safety Training-Fisheries (BST-F), Fishing Operations, Fish Handling, Refrigeration of Fish Storage, Fishery Engine Maintenance, and Radio Operators.

The Certification of Competency for the non-convention fishing vessel crews following the Minister of Marine Affairs and Fisheries Regulation number 33 of 2021 is based on vessels measuring 100 GT and below for the deck section positions, while for the engine section positions, it is based on a main propulsion engine with a size of 300 kW and below or 402 horsepower and below, and also on the fishing operation area. The positions on non-convention fishing vessels generally consist of Skipper, Officer, and Crew. Then, officer positions consists of: Chief Officer, Chief Engineer, and Machinist. Meanwhile the Crew consists of: the Able Body, Refrigeration Machine Operator, and Oil Engineer (Oilman). The positions and the certificates required are described in Table 1.

Table 1
Positions and competency certificates required on ships measuring between 30 and 100 GT

<i>Position</i>	<i>Certificate of Competency</i>	<i>Regulation</i>	<i>Certificate of Proficiency</i>	<i>Regulation</i>
Skipper	Deck Officer Class III for Fishing Vessel	Non-Convention	Basic Safety Training for Fishing Vessel Fisherman	Non-Convention
Chief officer			Proficiency Certificate Nautical for Fishing Vessel	Non-Convention
Able body			Basic Safety Training for Fishing Vessel	Non-Convention

The position class of the ship's crew in the engine part of the ship is based on the size of the main propulsion engine in units of kW or horsepower and is also determined by the area of fishing operations. Table 2 shows the details of positions and certificates for crew members of non-convention fishing vessels in the ship's main propulsion engine.

Table 2

Position of the crew of a non-convention fishing vessel for the main propulsion engine parts for engines between 100-300 kW or 134-402 HP

Position	Competency	Certificate of competence		
		Regulation	Proficiency	Regulation
Chief Engineer	Engine Officer Class III for Fishing Vessel	Non-Convention	Basic Safety Training - Fishing Vessel	Non-Convention
First Engineer			Fisherman Proficiency Certificate - Technics for Fishing Vessel	Non-Convention
Refrigeration machine operator			Fish storage refrigeration certificate	Non-Convention
Oilman			Basic Safety Training - Fishing Vessel	Non-Convention

The Ministry of Marine Affairs and Fisheries (MMAF) is responsible for ensuring that regulation of the Minister of Marine Affairs and Fisheries Number 33 of 2021 is obeyed, both in terms of getting competency certificates and obeying the rules. The implementation of education and training Certification of Competency (CoC) and Certification of Proficiency (CoP) of the crew is handled by the Marine and Fisheries Research and Human Resources Agency (BRSDMKP), which is coordinated by the education center and marine and fishery training and counseling center.

The implementation of certification systems for non-convention fishing vessel crew in the field can run effectively and efficiently if there is coordination between stakeholders in the field of capture fisheries. The relevant parties that can enforce this regulation are mainly the fishing port authorities. This is because non-convention fishing vessels can depart to carry out fishing operations if they have received a Sailing Permit from the harbormaster. Meanwhile, one of the conditions for obtaining the sailing approval letter is that the crew must have a competency certificate as required in Minister of Marine Affairs and Fisheries Regulation No. 33 of 2021. That is why the fishing port authorities play an important role in the implementation of STCW-F and its derivative regulations.

Perceptions of the fisheries port authority in Central Java on the readiness of implementation of Minister of Marine Affairs and Fisheries Number 33 of 2021.

The distribution percentage of respondents' perceptions in Central Java on the readiness of implementation of the Minister of Marine Affairs and Fisheries Regulation No. 33 of 2021 concerning the fishing log book, monitoring on board fishing vessels and fish transport vessels, inspections, testing, and marking of fishing vessels, as well as management of fishing vessel crewing is presented in Figure 1. The analysis of respondents' perceptions of their readiness to implement Minister of Marine Affairs and Fisheries Regulation No. 33 of 2021 resulted in the following findings: Socialization process perceptions can be characterized as still lacking (very little), whereas perceptions relating to the level of ownership of competency certificates and proficiency certificates for fishing vessel crews can be described as enough. Furthermore, the majority of respondents stated that the implementation of the training of the certifications of competency and proficiency for fishing vessel crews at fishing ports is still lacking (a little). Then, respondents' perceptions of the process of obtaining competency certificates for fishing vessel crews in general is that they still face some (enough) obstacles. Next, the majority of respondents have a still slightly (a little) a positive impression of the competence and proficiency certificate program stipulated in the Minister of Marine Affairs and Fisheries Regulation No. 33 of 2021. And finally, regarding the cost of obtaining competency and proficiency certificates for fishing vessel crews, most of the respondents stated that they were quite (enough) able to accept it. Based on the results of the analysis of respondents' perceptions, several strategies are needed, such as increasing socialization of the Minister of Maritime Affairs and Fisheries

Regulation Number 33 of 2021, increasing the provision of education and training for CoC and CoP for fishing vessel crews in the main fishing ports, improving the process system for obtaining competency certificates for fishing vessel crews so that it is more efficient and systematic, and increasing the consistency of enforcement of regulations regarding manning of non-conventional fishing vessels, so that the implementation of non-conventional crew certification runs more effectively and efficiently in the future.

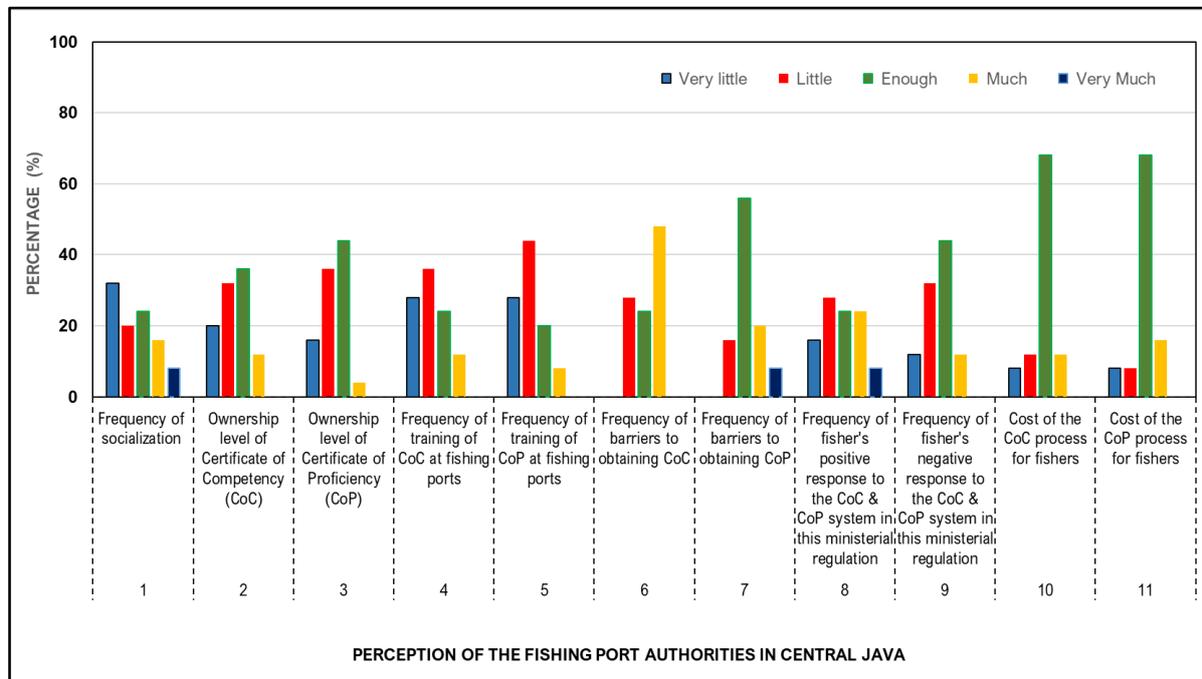


Figure 1. Distribution percentage of fishing port authorities' perceptions in Central Java on the readiness of implementation of Minister of Marine Affairs and Fisheries Regulation No. 33 of 2021.

Conclusions. Until now, the Ministry of Marine Affairs and Fisheries (MMAF) is the only organization in Indonesia that can give certificates of competency (CoC) and proficiency (CoP) to the crew of non-conventional fishing vessels. MMAF has issued regulations about the requirements for CoC and CoP certificates for the non-convention fishing vessel in Minister of Marine Affairs and Fisheries Regulation Number 33 of 2021. These regulations set the requirements for certificates based on the position of the crew on the non-convention fishing vessel and its size and area of operation. The implementation of education and training is carried out by the Marine and Fisheries Human Resources Development Agency (MMAF). The operational implementation and enforcement of the ministerial regulation is carried out by the fishing port authority, namely the Harbourmaster, or, if there is no Harbourmaster, the Head of the fishing port.

According to the Minister of Marine Affairs and Fisheries Regulation Number 33 of 2021, the certification of CoC and CoP for the crews of non-convention fishing vessels is based on vessels with a deck section of 100 GT or less and an engine section of 300 kW or less or 402 HP or less for the main propulsion engine. The types of positions on non-convention fishing vessels generally consist of Skipper, Officer, and Crew. Then, officer positions consist of Chief Officer, Chief Engineer, and Machinist. Meanwhile, the Crew consists of the Able Body, Refrigeration Machine Operator, and Oil Engineer (Oilman).

The perceptions of fishing port authorities in Central Java regarding their readiness to implement Minister of Marine Affairs and Fisheries Regulation number 33 of 2021 are that they are generally still lacking or not yet effective. Therefore, several strategies are needed in the future so that the implementation of non-conventional crew certification is more effective and efficient, such as increasing the dissemination of Minister of Marine Affairs and Fisheries Regulation number 33 of 2021, increasing the provision of education

and training for CoC and CoP of fishing vessel crews in the main fishing ports, improving the process system for obtaining competency certificates for fishing vessel crews so that it is more efficient and systematic, and increasing the consistency of enforcement of regulations regarding the manning of non-conventional fishing vessels.

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Conflict of Interest. The authors declare no conflict of interest.

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