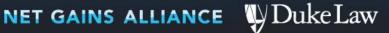


A 4-part podcast series from the Net Gains Alliance, Duke University and EM4Fish.

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For more info: netgainsalliance.org







Fishing for Data: Episode 2 (part 2) Guide

Digital Fisheries: Areas of Potential Secondary Data Usage

Episode Summary

This episode is the continuation and last piece of our conversation on potential secondary usage of electronic monitoring data. The 2-part episode explores the second major topic of our broader program on Electronic Monitoring & Reporting: namely, the potential for secondary data usage (both planned and unplanned) beyond simply the fisheries management and enforcement objectives that inspired the installation of the gear. This piece explores all other private uses of the data. Speakers will dive into data sharing agreements negotiation and policies and presenting their haves & have nots. They also present some beneficial secondary uses of the data exploited by fishermen themselves.

Learning Outcomes

This episode intends to discuss ethics & best policy practices when negotiating a data sharing agreement, and present how fishermen may take advantage of EM programs.

Transcription available

Please see the full transcript at the end of this document. Transcript was provided by Rev.com.

Content

Part 1: Recap

00:04-02:53

Part 2: Potential beneficial usage of EM data

03:09-08:41

Speakers:

- Melissa Sanderson, Chief Operating Officer at Cape Cod Commercial Fishermen's Alliance
- Amanda Barney, CEO of Teem Fish Monitoring
- Keith Porcaro, Director of the Digital Governance Design Studio at Duke Law

Part 3: Restructuring data streams: Data sharing agreements in the fisheries world

09:36-31:49

Speakers:

- Keith Porcaro, Director of the Digital Governance Design Studio at Duke Law
- Melissa Sanderson, Chief Operating Officer at Cape Cod Commercial Fishermen's Alliance

Relevant Terms

- EM/R: Electronic Monitoring and Reporting
- MSA/MSFCMA: Magnuson-Stevens fishery conservation and management act
- NOAA: National Oceanic and Atmospheric Administration
- NMFS: National Marine Fisheries Service
- FOIA: Freedom of Information act
- MMPA: Marine Mammals Protection act
- **OLE:** Office of Law Enforcement

Applicable laws

Magnuson-Stevens Act

References

- NMFS report
- NOAA podcast: Monitoring today for a sustainable tomorrow
 - o Monitoring Today for a Sustainable Tomorrow: Podcast #1 | NOAA Fisheries
 - o Monitoring Today for a Sustainable Tomorrow: Podcast #2 | NOAA Fisheries
 - o Monitoring Today for a Sustainable Tomorrow: Podcast #3 | NOAA Fisheries

Questions?

Questions, comments, and inquiries are welcome at fishingfordatapodcast@gmail.com

Future episodes will be posted at https://law.duke.edu/dclt/em

Transcript

Part 1: Recap

Libba Rollins (00:04):

Hi, I am Libba and welcome to the Fishing for Data podcast series. This podcast is produced by the Duke University Center on Law & Technology in cooperation with, and the support of the Net Gains Alliance, a global initiative in support of sustainable management of ocean resources through data modernization, an EM for fish, a digital hub for fisheries data and tech.

Kyle Medlin (<u>00:25</u>):

This episode is part two of our second episode in the series where we explore potential secondary uses of EM data. Last week, we discussed whether, and to what extent EM data can be used by NOAA and by other government agencies to accomplish various other objectives, both within and beyond fisheries' management. In the second part of the episode, we will be exploring some potential beneficial secondary uses of EM data. And to help us learn the ins and outs of secondary usage of EM data, we will be returning to speak more with digital data governance expert, Keith Porcaro, Teem Fish CEO, Amanda Barney, and COO of the Cape Cod Commercial Fishermen's Alliance, Melissa Sanderson.

Ines Nnoko (<u>01:01</u>):

This program is intended to be educational in nature, and as such, we do not intend that the information we discuss be taken as legal advice. If you would like to determine your or your fisheries liability or plan your own response to these issues, we recommend that you seek legal representation to assist you with your specific situation. That said, we are welcoming questions on this topic until June 15th at fishingfordatapodcast@gmail.com. On Friday, June 18th, we will host a live reaction and Q&A with speakers from the show and we may answer your questions. More information about the Q&A live session will be released soon on www.netgainsalliance.org.

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Libba Rollins (<u>01:54</u>):
I am Libba Rollins.
Ines Nnoko (<u>01:55</u>):
I am Ines Nnoko.
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And I am Kyle Medlin. And we will be your hosts here on the Fishing for Data podcast.

Libba Rollins (02:05):

Kyle Medlin (<u>01:56</u>):

Welcome back to Fishing for Data. In case you missed it, last week was part one of our episode on secondary uses of EM data. We looked into environmental and not environmental secondary data usage by NOAA and other federal agencies. We characterize these uses as being somewhere between neutral and adverse to fishermen's interests. If you missed that episode or the first episode in our series, be sure to go back and check it out. This week's episode, we will examine secondary uses of EM video data that are considered beneficial to fishermen.

Ines Nnoko (02:38):

Thinking about beneficial secondary uses of EM video data for fishermen, or as it turns out really any fisheries ready data also requires the conversation about data governance and data ownership.

Libba Rollins (02:53):

Yeah, what started out as a conversation about, oh, how can fishermen use EM data to meet their needs, transformed into a conversation about the governance of the larger fisheries data ecosystem and how it can be used to benefit fisherman's interests.

Part 2: Potential beneficial usage of EM data

Kyle Medlin (03:09):

And to start us off, we spent some time talking with Melissa Sanderson and Amanda Barney, whom we have introduced in the first part of this episode, about what they've seen as far as beneficial secondary uses of EM video data for fishermen. One idea we've heard from both of them is using the EM video for marketing and traceability, which allows fishermen to fetch a higher price. Here's Melissa, and how fishermen can use the EM to their benefit in this way.

Melissa Sanderson (03:32):

Some would use it to help with their own marketing efforts, so if they have a direct-to-consumer permit where they can sell directly off their boat, they might put snippets of the video up on Facebook so that they can advertise their fish to the community and say, look, you can watch me catching the fish that you are going to have for dinner tonight. Right?

Melissa Sanderson (04:18):

The other use that some of the local guys here have used their video for, we have had a couple of instances where the fishermen requested it in order to dispute something that happened during a coast guard boarding. So, after the event happened, they got back to shore and the captain called up the EM service provider and said, "I need a copy of this because I need to call the coast guard and have a conversation."

Kyle Medlin (<u>04:45</u>):

Here's Amanda Barney on the same topic. Amanda will mention the MSC that stands for Marine Stewardship Council, an organization which certifies that a fishery is well-managed and sustainable.

Amanda Barney (<u>04:59</u>):

So, it can be used in helping people get different prices or sell to different markets or get a label to demonstrate sustainability so they can, again, might get them at a different price. So that's another way that industry may use electronic monitoring data. So, it could actually be that a data set, not identical to the federal one, might be generated because it's like, well, we have an MSC program, and our EM data is going to be part of what is being used to ensure our fishery is sustainable for this certification.

Libba Rollins (05:33):

Amanda also told us about how EM video and its associated data has been used for programmatic and management aspects that benefit fishermen.

Amanda Barney (<u>05:42</u>):

For some fisheries what we have done is we use metadata from many years of the program for creating maps or for creating data visualizations that are used in conversations around Marine spatial planning. So that is one secondary use that we have done for industry. One of the things that we have been able to demonstrate with some of our sensor data is dispelling myths of bad practices. So, there has been several instances where electronic monitoring datasets, not necessarily just the video assets have been able to say, "Our sector's always accused of fishing over the line and these datasets have proven year after year, we're actually not fishing where we're not supposed to fish." And so, I do think that a secondary use of data is actually for some fisheries that use EM has been a slow reduction in some of the bad faith that can exist between fishing sectors or between fishermen and regulators, or actually help with public perception because they suddenly have datasets that demonstrate they're doing the right thing.

Amanda Barney (07:03):

And so that is more of a slow burn for data, but as most people who have worked in fisheries know, relationships between regulators and fishermen or between fishing sectors can be pretty polarized and pretty strained. And so suddenly, "anecdotal information" that the fishing industry may have been providing for years is suddenly data versus anecdotal information. And it can carry more weight in certain conversations. And so, we have found that the use of electronic monitoring datasets again, sometimes video assets as well, but sometimes it is just the general data set to turn again, "anecdotal information" from industry into an actual data set that is being used by regulators, has helped maybe reduce animosity a little bit on certain issues. Let us not pretend that it's made fishermen and then the regulators best friends, but to have these fishermen be able to quantify some of the information they've been providing for years, we've seen it be useful in the general relationship, in general ongoing conversations.

Libba Rollins (08:33):

Lastly, Amanda brought up the ways that EM data could be used for purposes beyond verifying logbooks, that improve management goals.

Amanda Barney (08:41):

Certainly, there's ways that auditable, verifiable, accurate, trusted datasets can deliver more than what they were designed to deliver. So, we're comparing logbooks, but we really trust this data and so do the fishermen, so we're going to use some of this data and stock assessment. And then for fishermen, the secondary use, they also would love to see better stock assessments. So, if their EM data can be used to augment survey data that may be smaller like, oh, we only do surveys for part of the year-by-year logbook data, and this EM data from the whole year. So, the fishermen might also love that as a secondary use of the data because they actually feel as though there's a larger data set and a broader data set being used to do stock assessment.

Part 3: Restructuring data streams: Data sharing agreements in the fisheries world

Ines Nnoko (<u>09:36</u>):

These are just a few ways that data generated primarily for regulatory purposes and fisheries can be purposed for other beneficial uses for both management goals and the business interest of fishermen. And this goes for all fisheries related data, not just EM data. The transition from analog to digital in the fisheries spaces is what has really allowed the community to imagine new ways of using the data.

Kyle Medlin (10:05):

We have seen how as the data collection processes begin to modernize and digitize in fisheries, not only is the community able to collect more and more data, but they have the opportunity to think about restructuring those traditional data streams that have dominated the field for the last several decades. We spoke with Keith Porcaro, whom we introduced in the first part of this episode on the traditional data stream and fisheries and the opportunity for change.

Keith Porcaro (<u>10:29</u>):

I think right now, most of it is focused on the government. Well, it is either focused on the government or in large companies that have the resources to deploy data to understand and improve their own operations. But because a lot of this, a lot of the moves toward this, to increase data collection, has been for regulatory purposes. And so, the government has pushed a fair amount of it. In an analog system or into older enforcement systems they may have had to submit a report, then wait for that report to be verified and then they can use it as actionable data. Because data can be replicated again and again and again, there is the opportunity for fishermen to use digital data collected right away to improve what they do.

Libba Rollins (<u>11:17</u>):

The transition to digital data collection in fisheries and the arrival of more and more tech and service providers, challenges traditional notions of data ownership.

Keith Porcaro (11:26):

If I can make a million copies of it or independent infinite copies on it, it is hard to say, do I own all of these infinite copies, even if I pass them around? I think it is more comprehensible to think about data here as a relationship between a vessel and a provider and an EM provider. And so really when we are talking about ownership, we are actually talking about, and this gets back to the definition of governance, but it's like, who's void, whose agreement do you need in order to be able to do a thing with this data that we have.

Kyle Medlin (11:58):

As our conversation with Keith will reveal, data governance discussions within the fishery community are essential to developing beneficial uses of any sort of data on behalf of fishermen. Here is a little more on data governance.

Keith Porcaro (12:10):

There are two ways to think about data governance. One way is an old corporate way where data governance is literally the access rules governing who can access a particular database. And so, when,

especially in the corporate world or looking at old school corporate databases, that is what you see references to data governance mean. I think as data collection and data sharing, and data use have become easier to do and become more prevalent, the definition of what data governance is, has shifted a little bit. And so that second definition is really the processes and policies around making decisions about who can access data, who can collect data. And so, in the fisheries context, it is a little bit of both, there's the old school roots of data collection, which is collecting data for reporting and compliance purposes about the fisheries operations.

Keith Porcaro (13:11):

But as the potential uses for data and the volume of data that is being collected both increases, the definition of governance I think in the fisheries context is going to have to get a little bit more holistic too. So, I think when we are talking about data governance here, we are really talking about who gets to have a say in what happens to all of this data that's being generated and collected and processed and sent around.

Libba Rollins (13:38):

So, the transition from analog to digital data collection is creating or will create tons of new data streams, with those new data streams comes the potential for a myriad of secondary uses of the data generated by these systems. Some of them are potentially beneficial to fishermen and some not. Here is some from our interview with Keith. When we say secondary data use in a fisheries context, what does that mean for you?

Keith Porcaro (14:02):

Secondary data use means what it says on the box, which is a secondary use of data, any use of data besides the reason, the use that it was collected for. So, one example might be with electronic monitoring in fisheries, which is mostly video recording. If you used that data to then train an image recognition system to recognize fish and estimate their size, that would be a secondary use of data because that was not originally what it was collected for.

Libba Rollins (14:38):

In your experience, working with fishermen, have you heard of them mentioned any secondary uses of the raw in video that they are worried about?

Keith Porcaro (14:48):

You can think about it as uses that we are worried about versus uses that we are excited about, but I think there is a middle ground here, where the, especially with video, where the secondary uses of data can be used to create new services, like an image recognition service, is not in and of itself harmful or beneficial, but it is a service that people will pay for. And so, I think there are almost three parts to this, there is a part that is like it's being used in a way that harms fishermen interests, like using sensor data to infer where fishermen have actually gone. And so, people, they might be worried about people honing on them, where they are going to catch fish. There are beneficial uses where you could imagine EM data being used for supply chain verification, to prove that the fish that you are eating is in fact the fish that was caught on this boat on this date.

Keith Porcaro (15:50):

And then there is this stuff in the middle where if an EM provider uses data, uses video data that they are contracted to collect by a fisherman and uses that to develop an image recognition service and then sells it to the fishermen, on the one hand, great, now the fishermen have access to a better service. On the other hand, they have used data that arguably belongs to the fishermen, they could not have built this without that contractual service and the fisherman is seeing no value from this, other than the value that the service provides. And so, to me, I think the interesting question becomes when we are collecting this data for regulatory purposes and there is an intermediary that is using it to develop a new commercial service that does not have any relationship to the regulatory issues, who owns the value of that service? Is it the fishermen who are putting cameras on boats? Is it the company that is recording the video? Is it whoever is developing the algorithm? Is it someone else?

Keith Porcaro (16:58):

It is playing out everywhere, I think. And not just in fisheries, you see it playing out in health and any field where you can analyze a bunch of data and make inferences about it and use that to deliver something that is new.

Libba Rollins (17:14):

Do you think there is some predictability to secondary uses of the data? Is it possible to anticipate everything and prevent it, say, with a data sharing agreement?

Keith Porcaro (17:23):

My observations of data sharing agreements in fisheries and ocean related data in general is that they do not do a good enough job contemplating secondary uses of a dataset. And on the one hand it is hard to do that, it's hard to predict which of those secondary uses are going to manifest, which of them are going to work out, which of them are to have any value. On the other hand, not mentioning it at all leaves it in a gray area. And I think that we are missing the opportunity to develop shared principles about how to treat these secondary uses of data like this.

Ines Nnoko (<u>18:10</u>):

Any tips for developing those shared principles?

Keith Porcaro (18:13):

Funnily enough, I am in the early stages of a paper that gets to some of this. I think in general, when people think about contracts for data sharing, they think about it as just one more box to check. We need some legal language, we need to go dig out an MOU and we will find it, we will sign it and then we'll be good. And I think that the stakeholders, the people actually using the data, sharing the data, need to spend a little bit more time imagining how this data could be used for good or ill. It is not really just a cost benefit, it's just like what will people get out of this data? But I think having that conversation and setting that expectation at the beginning of the contract, before the contract is signed, even if it is not, it doesn't end up being memorialized, is just really helpful.

Keith Porcaro (<u>19:09</u>):

And in these contracts, if they were specific about, this was what this agreement is for, this is the purpose of it, all other uses of this agreement or all of their uses that are not explicitly contemplated here, like you need to come back to us and get approval or on and on and on. But thinking about that contract is not just this thing at the beginning that you signed and then get out of the way, but it is

setting the tone for a process and a relationship that's going to last, as long as the data sharing lasts is something that I think just isn't, it's not done enough, and in data sharing what really matters is what happens after the contract is signed. But what is really important is the process of imagining ways that data could be used and imagining this future relationship that you have between you and the other person who's entering into this agreement. And it is that process that's really going to define your agreement more than whatever is on the contract.

Ines Nnoko (20:14):

Keith gave us a lot to think about when it comes to learning for all these potential secondary users at the opening stages of an agreement negotiation. We will hear more from Keith and from our other guests when we come back.

Libba Rollins (20:36):

Dear listeners, please submit your questions and comments at fishingfordatapodcast@gmail.com by June 15th. We look forward to reading your thoughts, stick around, we will be right back.

Kyle Medlin (20:53):

And we are back. Keith's comments really drive home the importance of EM providers and their customers having intentional thoughtful conversations during the contractual agreement stage. I mean, this goes for anyone in the fisheries space that's entering into a data sharing agreement together.

Ines Nnoko (21:07):

The nature of secondary uses makes them hard to predict, right? You can't always know what else you can do with data until after the fact. When we think about beneficial secondary uses of EM data, they have arrived on the scene after EM program implementation and weren't things people were necessarily thinking about beforehand.

Libba Rollins (21:29):

In these early stages of setting up data agreements, there is a lot of focus on what not to do with the data. Here is more from our interview with Keith.

Keith Porcaro (21:38):

What I expect is that the first stage of new data agreements is going to have blanket bands, like don't use this for secondary purposes you can only use this for the purposes that are articulated in this agreement, and that's it. And then, I think as the industry gets a better understanding or move from the hypothetical, like this is what we could use all of this data for, to actual services and business models of using this data and selling services for image recognition and for supply chain monitoring and for catch analytics and on and on, then you'll start to see some of those services carved out. Where you might see an EM provider say, "Okay, we will store your data and for an additional 10 bucks a month, we'll give you this other analysis service. And you can turn it on or turn it off, it doesn't matter, but we're going to sell it directly to you."

Keith Porcaro (22:31):

But while we are still in that transition phase, we're collecting all this data, it's still new and ideas about how we could do it are still, they're more in prototype than in production, it's going to be hard for people to predict what the really exciting, good, or scary, risky uses are actually going to be.

Ines Nnoko (22:55):

For me, the conversation with Keith really highlights that developing potential for the official secondary uses of ER data, or really any fisheries data for fishermen really requires thoughtful, creative conversations that sets the terms of the relationship.

Libba Rollins (23:16):

Totally. And the opportunity to have these sorts of conversations between providers and fishermen is slated to increase in the coming years. Here's Melissa, again, about some changes coming to New England.

Melissa Sanderson (23:26):

So as the program manager, essentially for the last five years of pilot programs, we have worked with a couple of different EM service providers. Going forward for this year, the contracts are no longer between the Fishermen's Alliance and the service provider, they are now between each individual sector and the service provider. So, the catch share program in New England Groundfish is unique in the country, in that the allocation gets given to essentially a cooperative instead of to the individual official. And those cooperatives are called sectors. And so, for every fisherman that wants to be part of EM, they have to make sure that their sector manager has a contract in place with an EM service provider.

Ines Nnoko (24:17):

Looks like there is a lot of opportunities in the new future for having these sorts of data sharing agreements, conversations. Here is more from our interview with Keith.

Libba Rollins (24:28):

So, if you were a fisherman, what would you want to know about an EM tech company and their data usage policies before you provide them with your data?

Keith Porcaro (24:36):

I would want to know two or three things. I would want to know what their policies are for sharing data like this. And I don't just mean, will you give it to the government if I ask? But if this is a thing that I am going to have to do once in a while, is the process not going to make me want to tear my hair out? The second is I want to know what their other businesses are. And related to that, the second, closely coupled to the third thing is, I want to have a sense of what the terms on their analysis of the data, of my data that is sitting in there on their servers is. And if they have got to get permission or if they're just going to plan on doing whatever they like with my data.

Keith Porcaro (25:28):

And I think knowing that from a perspective of what are the other business offerings that they have, will be important because that is a real look at what their priorities are. The last thing, and I guess that is, maybe this is the one that I forgot, but maybe the most important is, I would want to know what exit looks like. I would want to know that if I decided that I did not want to deal with them anymore, and I

wanted to go to a new provider, how expensive is it for me from a time and money perspective to do that. Is my relationship with them, even if I stay for a year, is it really going to be a five- or six-year relationship because there is no way to move the video data off their servers? In law, the ability to exit a relationship is often a really good indication of who has power. If you can't leave, the answer is probably not you.

Kyle Medlin (26:22):

Throughout this larger episode, we have talked about two sorts of paradigms, one being a fishermen centric kind of design and the other being more surveillance-oriented design. In order to both arrive at and participate in the more fishermen and centric design; it seems that fishermen need to be prepared for some things. And we asked Keith what it takes for fishermen to be prepared for that new paradigm.

Keith Porcaro (26:45):

I think the easy answer is, well, fishermen should learn about this new paradigm that is coming and they should train themselves to be more informed consumers of EM licensing agreements and things like that. I think that is wrong and the reason I think that is wrong is it might not have the same impact as organizing. I think that really what, especially small boat fishermen, their ability to change the terms of engagement with these vendors that are being mandated by law enforcement or pseudo regulators, is going to be somewhat minimal on their own. And so, I think that in order to really influence the discussion, they need to organize and make sure that the collectives that they have already organized are able to ascertain their rights. And that doesn't mean there's no education, sure, just like anything else learning the new rules of the game so that you can protect yourself is really important.

Keith Porcaro (27:59):

But I think that it is an unfair time mask to say, in order for you to have a set unit to learn about this whole thing, you need to learn about AI and image recognition and data contracts, especially because the effects of this paradigm shift are going to affect everyone. They are going to spread far beyond people who are negotiating individual agreements. If somebody makes an image recognition system, that is really good and it's developed from EM data, it won't matter whether you signed the contract or not, your competitors will be using it, you'll be using it. It will just be a thing. And so, without that collective organizing and without that collective negotiating power, I think it's going to be really difficult for individual fishermen to get a toehold and to ensure that the norms that are being set industry-wide are beneficial to them and not harmful.

Libba Rollins (29:12):

That is actually super relevant given the recent NOAA draft guidance that has come out. I mean, in so many of your comments, it is not really just a matter of law and compliance, it's a matter of, as you express there, norms, market forces, real options that people have and collective power.

Keith Porcaro (29:29):

In governance, in multi-stakeholder governance, there are two pieces that are interesting, and they are a little bit intentional. One is this idea of fairness in a governance process is that what they get out of this process is going to be proportional to the time and energy they put into it. And then the other piece of that is when you are thinking about who ought to be involved in a multi-stakeholder process, the question is usually based on influence, does this process influence this person? If so, we should probably

involve them because it is going to change their life a bit, or does this person influence this process? And those two things make a lot of sense.

Keith Porcaro (30:07):

But when you think about something like data and digital tools where they have the possibility of affecting people and delivering value to people but also risk to a group of people, even if those people have never heard of the governance process or didn't invest any time in it, the proportionality bit all go out the window and this idea of who we need to involve and who needs to have a seat at the table just expands in a way that is, I think difficult for us to really reckon with. And so, I think from a practical perspective, the argument might be like, you fishermen need to have a seat at the table in this process and the best way to do that is through collective action.

Libba Rollins (<u>31:05</u>):

So, it sounds like even apart from fisheries management, there are a bunch of secondary uses of this data that can actually be beneficial for fishermen, from marketing to traceability, to creating better stock assessments, to even improving the relationship between regulators and the industry. But as Keith points out, the easiest way to maximize EM's benefit is for fishermen to be involved in these discussions early on and think proactively not only about whether they'll use EM on their boats, but how.

Ines Nnoko (31:35):

To our listeners, be sure to tune in this Friday, June 11th, for our final episode in these series where we will be discussing the future of EM and the smart boat of tomorrow.

Kyle Medlin (31:49):

In the meantime, thanks to all our guests for joining this conversation. Listeners, if you have any thoughts or questions, as always, please drop us a line, so to speak, at fishingfordatapodcast@gmail.com. And be sure to get those in by June 15th, if you would like us to cover them at our live Q&A. We look forward to hearing from you. And thanks again for listening.

About this podcast series

Fishing for Data is produced by a legal, policy, and environmental science team of fellows from the Duke Center on Law & Tech and sponsored by the <u>Net Gains Alliance</u>, a nonprofit global initiative dedicated to better information for better oceans.

More information can be found at https://law.duke.edu/dclt/em/.



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