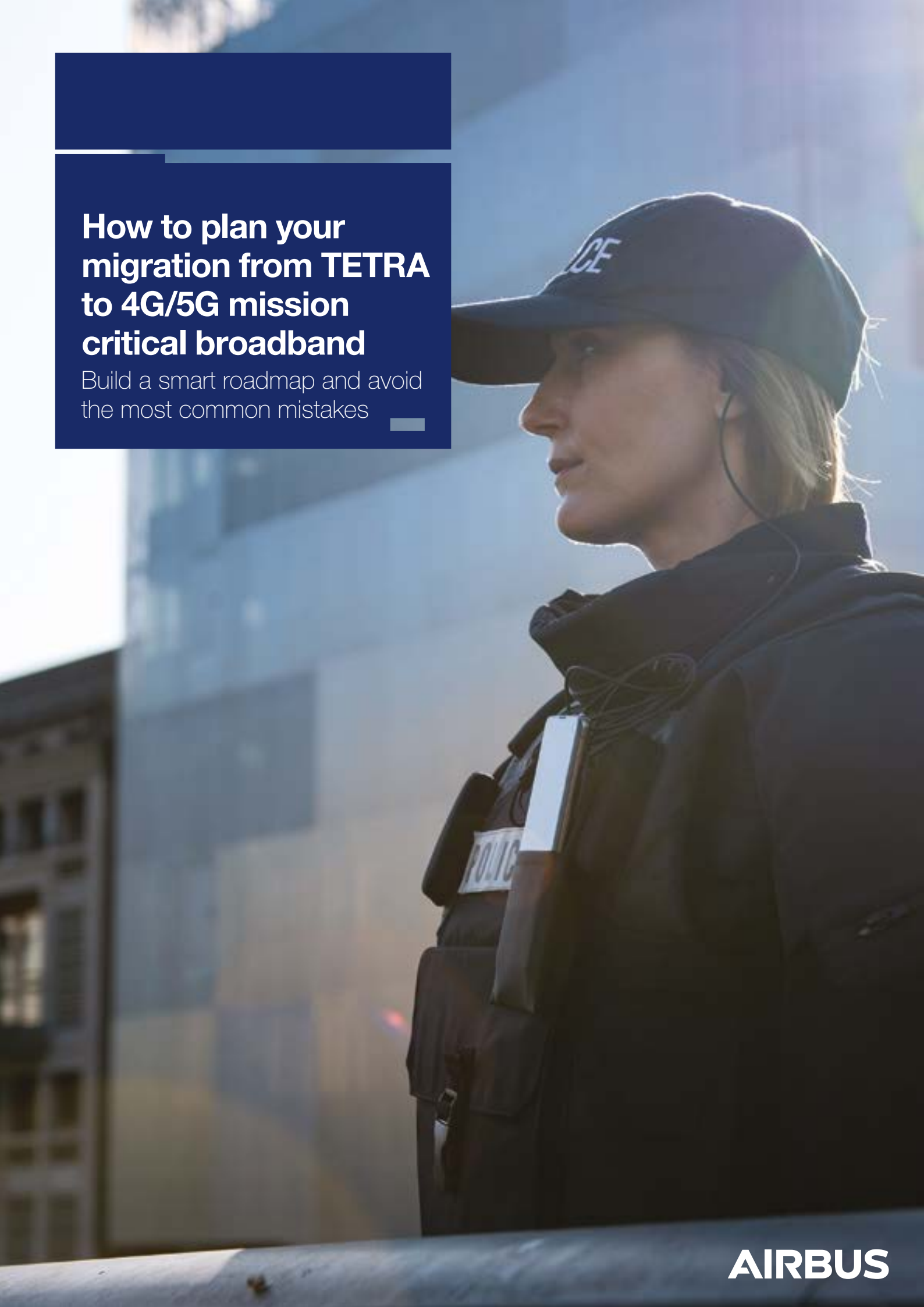
How to plan your migration from TETRA to 4G/5G mission critical broadband

Build a smart roadmap and avoid the most common mistakes



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Why mission critical broadband now?

Today's economic pressures are affecting public safety organizations as well as enterprises. Public safety organizations need to work more efficiently. This will help combat threats and deliver better safety and security. Enterprise professionals need to improve efficiency to deliver better results - without spending more money.

New communications technology provides one solution to these challenges. It can help organizations to manage incidents and emergencies better than ever. It can even help find new ways to prevent them.

While new technology is a solution, it is also a challenge. This is because communications are critical to the operations of public safety organizations and businesses. Radio communication is the lifeline for professionals today. If it stops working, people cannot work.

How can new communications technology be introduced smoothly and successfully? What are the risks? How can organizations avoid the biggest mistakes? This white paper is a good starting point for organizations planning to migrate from TETRA to 4G/5G mission-critical broadband.

There will be huge rewards for those who get things right. Communications over broadband can improve efficiency and security while helping optimize both capital expenditure and operating costs.

A wealth of opportunities

Police officers, firefighters, and teams working for enterprises use radios to talk to their team members and dispatchers. However, these devices have limited data capabilities.

Rich and abundant data can make a real difference in day-to-day operations, on the street, at an accident site or at a fire. Professionals can only make use of this rich data when they have a mission-critical broadband connection.

The connection needs to deliver:

- Enough capacity
- Availability and reliability – critical organizations have priority over everyday users
- Security – data protection and authentication solutions
- Coverage – critical users need their communications wherever their work takes them

Rich data offers significant opportunities for organizations to change and improve the way they work. Today's operations are based on voice commands and exchanging spoken information. With broadband data, operations can also use and benefit from video and other data.

Broadband data from different sources and platforms can be combined to deliver better situational awareness. A better picture of what is happening means better decision-making.

Mission-critical broadband can give new possibilities for different organizations to work together – to communicate and collaborate even more easily and efficiently than before.

The biggest risks

The biggest risk in migrating from TETRA to 4G/5G is disrupting the communications system, which is the backbone for all the operations in user organizations.

This could happen if users are forced to switch to a new technology suddenly. What if the new technology doesn't support their current ways of working?

Broadband migration means that users will adopt smart devices. Learning to use these devices for work will be challenging enough. Expecting people to start communicating and working in a different way at the same time would be a big risk.

If the migration disrupts the organization's operations in any way, it is not going to be a welcome journey for users. They will be dissatisfied and may resist the changes. And the whole society may suffer.

Do not try to make everything in one large leap! Airbus recommends dividing the changeover into several phases. This will minimize risks to the organization's daily operations.

How to avoid the most common mistakes

Avoid the most common mistakes with three do's and three don'ts for planning your migration!

Do's

1

Involve the users early on

Moving from TETRA to broadband will mean big changes for many people. You will get best results when you involve, engage, and empower users from the start.

It is vital to get people involved in the changes. First responders and other professionals will want to test new solutions before adopting them. Lives could be at risk if something doesn't work right during a mission. This is why user acceptance is critical.

User organizations should also decide how quickly they adopt the new services, and in which order.

Users can advise on how the new communications technology can help them in their work.

And when users can communicate seamlessly, no matter which technology their colleagues use, they will have little reason to resist the change.

2

Consider user needs and use cases

Working teams need easy-to-use communication tools. People want to concentrate on their duties, not on their tools.

Adopting broadband communications means that users will adopt smart devices.

Learning to use these devices can be a big challenge. To make it easier in the beginning, users should be able to continue with communication functions and features that are familiar from TETRA - even when they use smart devices.

Switching from one communication technology to another will only work when users' operational needs are a central part of the plan - from start to finish. True customer-centricity is the major guarantee of a successful migration.

3

Break down the migration project into phases and steps

Breaking a project into phases and steps has many advantages. It is easier for everyone - and less likely to disrupt users' operations. No one wants to adopt new ways of working overnight!

Phases allow each stakeholder to adopt broadband in the way that works for them.

Don'ts

1

Don't think it is all about technology

When discussing TETRA migration, people often talk about broadband technologies and interfaces. This is risky, because the users' point of view might be neglected.

Migrating from TETRA to 4G/5G broadband will be a demanding project. A look beyond technology is necessary, to see the users' real needs. Otherwise, users will face new difficulties instead of getting help for their current tasks. That is why their needs must drive the migration planning.

MCX migration is not enough

MCX refers to the push-to-talk, push-to-data and push-to-video over broadband. It is a critical part of TETRA to 4G/5G migration but is still a small part of the whole project. MCX migration would not include the migration of control rooms, dispatching solutions, emergency response centers, or the organization's own applications.

2

Don't disturb the users' operations during migration

User organizations want to keep using the communication services that meet their needs. It will be a big mistake to offer users a new service that does not meet these needs.

Adopting smart devices and broadband should be easy for users. It is important to avoid any breaks in service. And big changes, or several changes happening at once, could mean longer service breaks.

Especially in the beginning, users should not have to work in a different way when moving to broadband. They are used to TETRA and want to continue working in the same way. They also expect to communicate with colleagues seamlessly on either technology - TETRA or broadband.

3

Don't set too narrow a scope for the migration project

The project will involve a large number of stakeholders, solution providers, and participants. The plan must be flexible, to make it easy to accommodate any changes.

User organizations must ensure that the budget covers everything needed – including training for the users. The project would fail if the budget covered only the communications from TETRA to MCX and nothing else.

What would make your TETRA migration a success?

Professional mobile communications have already gone through one major transformation - from analogue to digital. Moving from TETRA to broadband will bring benefits from multimedia, apps, and new services. These new services will generate more data than ever, and the data offers a wealth of possibilities to improve situational awareness and operational processes. These new services are also the best promotion for the migration.

Everyone involved should understand that the migration will take a long time. Moving too quickly would only mean taking unnecessary risks.

When TETRA migration considers the way people work today, it can be smooth and seamless for the users.

The new solutions will then be more than a replacement for the current communications over TETRA. They will be an improvement, bringing benefits without taking away any value.

Success will follow if users are involved and can contribute early on.

This will provide the project with a high-level roadmap and a framework for the migration project.

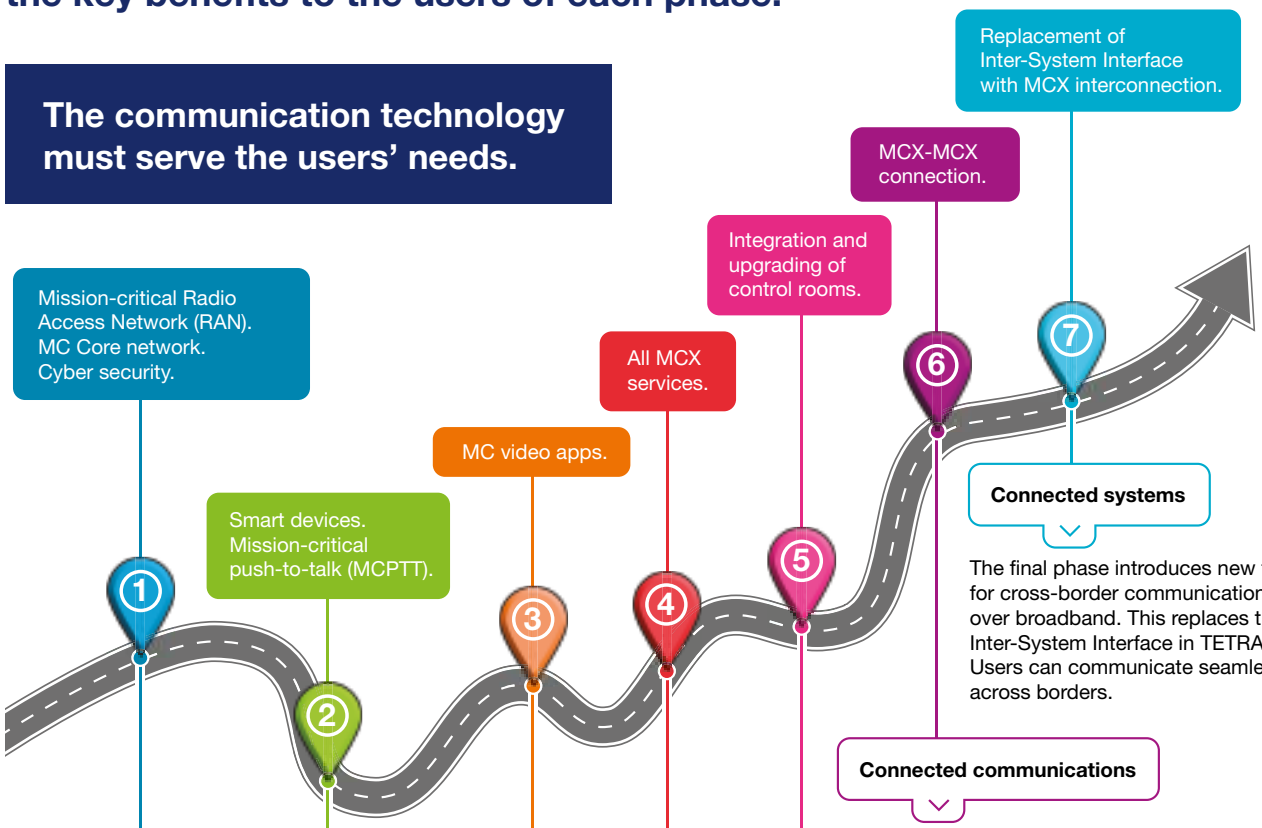
5 key ingredients of a smart roadmap

1. The migration is flexible for all stakeholders - the operator as well as the user organizations.
2. Users can continue working as usual during the migration. They will first adopt the new smart devices for their critical communications, and the features and functions will work as they do today.
3. People can connect seamlessly between the two technologies. Voice and messaging will work the same way for both radio users and people who use broadband. Tailor-made custom applications will not need to be adjusted.
4. The Command and Control room systems will be able to adopt mission-critical broadband step-by-step.
5. The roadmap towards the mission-critical broadband communications ecosystem evolves and becomes richer as the migration progresses.

High level TETRA to 4G/5G migration roadmap

Below is an example of a high-level roadmap of how to migrate from TETRA to a broadband ecosystem. It illustrates the phases of technical development. It also summarises the key benefits to the users of each phase.

The communication technology must serve the users' needs.



Mission-critical broadband access

The first phase introduces the broadband connection service. This service is mission critical to meet the needs of its professional users.

New devices, familiar user experience

The second step is the rollout of the smart devices. Users adopt new devices, but they can continue to communicate in the same way as with TETRA.

New broadband apps

The third phase delivers new capabilities that only broadband can offer. These can include multimedia services such as video sharing, or solutions for better situational awareness. New apps could automate repetitive tasks. People will welcome change when they get an extra benefit.

New user experiences

The fourth phase brings in all MCX services.
Users get the full benefits, with new PTT and data features.

Enhanced situational awareness

In the fifth phase, control rooms, emergency response centers, and customized applications will be integrated. Control rooms offer new data and video enabled features, giving user organizations a better view of events.

Connected communications

The sixth phase introduces the standard MCX-MCX connection. Standard MCX systems will connect smoothly together. For example, the MCX systems of electricity companies or public transportation providers can be connected to authority communications. This will help ensure seamless cooperation during incidents.

Connected systems

The final phase introduces new features for cross-border communications over broadband. This replaces the Inter-System Interface in TETRA. Users can communicate seamlessly across borders.

How to build your smart migration roadmap

A successful migration project needs a common understanding and a clear vision. This is why the project needs a shared roadmap - a summary of the strategic milestones of the project. The roadmap builds on a thorough understanding of the stakeholders' needs – through structured discussions, for example. Deciding on a common direction for the migration path brings the biggest value for the project.

The roadmap should answer these important questions:

- What is our shared vision?
- What will the future look like?
- Which steps will take us to the future?
- What are the technological steps and what will those steps bring to the users?

Evolve in a user centric way

Users are the key to a successful migration from TETRA to 4G/5G broadband. They can give valuable input through interviews and workshops. The project will learn what works well and what users expect to get on top of that. Involving the users deeply will help the project win their commitment.

Think in steps and phases

Taking the migration one step at a time has many advantages. It is easier for everyone - it also has lower risks. For example, user organizations will appreciate a stepped approach because it will be less disruptive to their operations. No user will want to adopt new ways of working overnight!

The phases also split the introduction of new technology into manageable parts. The project leaders can decide how to perform the migration – whether by organizations, geographical areas, talk groups or users.

A migration project divided into phases can ensure that the system supports the users' operational needs. This will ensure users are ready to adopt the new technology. When everyone has completely adopted broadband in one area, the narrowband network in that area can be shut down. This brings OPEX savings throughout the migration period.

Taking the migration one step at a time has many advantages. It is easier for everyone - it also has lower risks.

Getting it right

There will be significant rewards for those who get things right. Communications over broadband can improve efficiency and security and help optimize both capital expenditure and operating costs.

Collaboration and early engagement with user organizations is the best way to help the complex TETRA to 4G/5G migration project run smoothly towards its successful conclusion.

Talk to Airbus!

Airbus has long-standing relationships with numerous different customers, some spanning decades. This has given Airbus an excellent understanding of the requirements and needs in the mission-critical communications market.

Airbus is working with its customers on broadband projects to create flexible roadmaps that ensure a smooth migration by putting user needs at the center. The Airbus portfolio includes helpful services such as facilitating migration planning workshops and roadmap analysis.

This, combined with technical expertise and a deep understanding of the opportunities offered by the latest technologies, makes Airbus an excellent partner for you in your migration project.

Contact Airbus experts and you will be better positioned in your TETRA to 4G/5G migration project:

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