



Working Group 7: Legacy Network Best Practices Update

Status Update

September 24, 2014

Kyle Malady, Verizon, Chair

WG7 – Legacy Best Practices Update

Charter

WG7:

The majority of the best practices recommended by CSRIC address the reliability and resiliency of legacy communications networks, including 9-1-1 networks and services. CSRIC III took a fresh look at the 9-1-1 best practices, but the other legacy best practices have not been examined since CSRIC II. This Working Group will review the legacy best practices to identify where additional practices may be necessary given changes in technology, practices, or observed reliability trends. The Working Group will then recommend changes to the existing set of best practices to address the topics revealed by the foregoing analysis. Finally, the Working Group will consider revisions to best practices proposed by the Alliance for Telecommunications Industry Solutions and recommend how to incorporate these changes into the wider body of best practices.

Included Item:

Consider an issue related to security of manholes and expedited restoration following a associated outage.



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Current Objectives

March 2014:

- ✓ Consider an issue related to security of manholes and expedited restoration following a associated outage.

September 2014:

- ✓ Gap analysis of existing legacy best practices, identify where additional practices may be necessary given changes in technology, practices, or observed reliability trends.
- ✓ Recommend changes to the existing set of legacy best practices to address the topics revealed by the gap analysis process.
- ✓ Consider revisions to best practices proposed by the Alliance for Telecommunications Industry Solutions (ATIS) and recommend how to incorporate changes into the wider body of best practices.

March 2015:

- Recommend revisions to the best practice prioritizations based on CSRIC II WG6 recommended process.



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Current Members (15)

| WG-7 Member | Company |
|--------------------------|----------------------|
| Kyle Malady (Chair) | Verizon |
| Mary Boyd | Intrado |
| Tim Collier | Sprint-Nextel |
| Shahin (Shaw) Daneshkhah | Sprint-Nextel |
| Victor DeVito* | AT&T |
| Stacy Hartman* | CenturyLink |
| Robin Howard* | Verizon |
| Rick Krock* | Alcatel Lucent |
| John Marinho | CTIA |
| Bob Oenning | 911RP |
| Andre Savage | Cox Communications |
| Andy Scott | NCTA |
| Gigi Smith | APCO |
| Kathy Whitbeck | Nsight |
| Christian Vogler | Gallaudet University |

***Subteam Leaders**



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Introduction

The FCC defines Best Practices as “*the most efficient and effective method of accomplishing the tasks in each of our covered areas, based on repeatable procedures that have proven themselves over time for large numbers of people, responses, organizations, or functions.*”

Objective 1: Identify Legacy Best Practices

Review the current set of industry Best Practices and identify a subset of those to be studied for legacy reliability and resiliency applications.

Objective 2: Review and Modify Legacy Best Practices

Review the subset of industry Best Practices determined to qualify as legacy Best Practices.

Objective 3: Recommend Changes to Existing Best Practices

Document the recommended changes to qualifying Best Practices, new recommended Best Practices, and Best Practices identified for deletion.

Objective 4: Incorporate Recommendations by ATIS

Review revisions to Best Practices proposed by ATIS NRSC and recommend how to incorporate the changes into the wider body of Best Practices.



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Scope

1. Focused on Best Practices originally developed as applicable to legacy networks, systems, and processes.
2. Identified Best Practices defined as the subset of the total Best Practice library that was not related to cyber security or applied only to public safety.
3. Identified 476 Best Practices as the team's workload.
 - 275 – Network Reliability and Interoperability
 - 25 – Disaster Recovery and Mutual Aid
 - 176 – Physical Security
4. This report reinforces previous guidance that industry Best Practices are voluntary in nature and may not apply in every situation due to the need for flexibility, innovation, and control in the management of different carriers' unique business models, cost, feasibility, resource limitations, or other factors.



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Building Blocks & Supporting Elements

BEST PRACTICE STRUCTURE

- Two key building blocks
 - Wording
 - References
- Supporting elements assist in finding and applying Best Practices
- Four supporting elements are
 - Network Type
 - Industry Role
 - Status
 - Keywords

Best Practice Building Blocks

| Best Practice Wording | References |
|---|--|
| <ul style="list-style-type: none"> • Industry Roles, should [consider] Best Practice | <ul style="list-style-type: none"> • Documents, Web links, Examples, etc. |

Supporting Elements

| | | |
|--|---|---|
| <p>Network Types</p> <ul style="list-style-type: none"> • Cable • Internet/Data • Satellite • Wireless • Wireline | <p>Keywords</p> <ul style="list-style-type: none"> • Access Control • Buildings • Business Continuity • Contractors & Vendors • Corporate Ethics • Cyber Security • Disaster Recovery • Documentation • Emergency Preparedness • Encryption • Essential Services • Facilities – Transport • Fire • Guard Force • Hardware • Human Resources • Industry Cooperation • Information Protection • Intrusion Detection | <ul style="list-style-type: none"> • Liaison • Material Movement • Network Design • Network Element • Network Interoperability • Network Operations • Network Provisioning • Pandemic • Physical Security Management • Policy • Power • Procedures • Public Safety • Security Systems • Software • Supervision • Technical Support • Training & Awareness • Visitors |
| <p>Industry Roles</p> <ul style="list-style-type: none"> • Property Manager • Equipment Supplier • Government • Network Operator • Public Safety • Service Provider | | |
| <p>Status</p> <ul style="list-style-type: none"> • Critically Important • Highly Important • Important | | |



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Methodology

| Checklist Item | Definition | Choices |
|--------------------------------------|--|---|
| In Scope | Best Practice addresses an issue that is not associated specifically to Cybersecurity or Public Safety needs or class of problems. | Y = This BP is in-scope for Working Group 7 N = This BP is out of scope for Working Group 7 |
| Relevant | Best Practice is still valid and relevant to industry (i.e., it still addresses a current need or class of problems). | Y = BP is still relevant to industry N = BP does not address current needs, is outdated, or could be recommended for deletion |
| Wording OK | Best Practice is worded in a way that clearly states the need or class of problems and is OK as written. | Y = BP is OK as written and no change is necessary N = BP needs to be re-written and/or updated |
| References OK | Reference material is relevant and worded OK for this Best Practice and does not need to be updated or removed. | Y = References are OK as written and no change is necessary N = References are no longer accurate and needs to be updated or deleted |
| Network Types OK | Network Types for the Best Practice are correctly stated and do not need to be updated. | Y = Network Types are accurately stated and no change is necessary N = Network Types need to be updated to include/exclude one or more |
| Industry Roles OK | Industry Roles for the Best Practice are correctly stated and do not need to be updated. | Y = Industry Roles are accurately stated and no change is necessary N = Industry Roles need to be updated to include/exclude one or more |
| Correct Status OK | Status is correctly stated for this Best Practice as Critically Important, Highly Important, or Important. | Y = Status is accurately stated and no change is necessary N = Status needs to be updated to a new status |
| Keywords OK | Keywords are correctly identified for this Best Practice. | Y = Keywords are accurately stated and no change is necessary N = Keywords needs to be updated to include/exclude one or more |
| Web links OK | Any Web links embedded in the Best Practice are up to date and go to the correct web site/page. | Y = Web link(s) are working and goes to the correct web site/page N = Weblink(s) fail or do not go to the correct web site/page N/A = Not Applicable for this BP |
| No reference in Best Practice | There are no documents or web links mentioned in the Best Practice verbiage that could be moved to the References section. | Y = No document or weblink references in the BP verbiage N = There are document(s) and/or web links in verbiage that need reviewed for movement to reference section N/A = Not Applicable for this BP |
| One Thought | There is only a single thought contained in this Best Practice. | Y = There is only a single thought depicted in the BP N = There are, or appears to be, multiple thoughts referenced in the BP |

BEST PRACTICE REVIEW CHECKLIST

- 11 Points to ensure consistent and repeatable process across subteams
- Ensure all supporting elements of a Best Practice were addressed
- Delivers Best Practices quickly into on-line databases



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Methodology

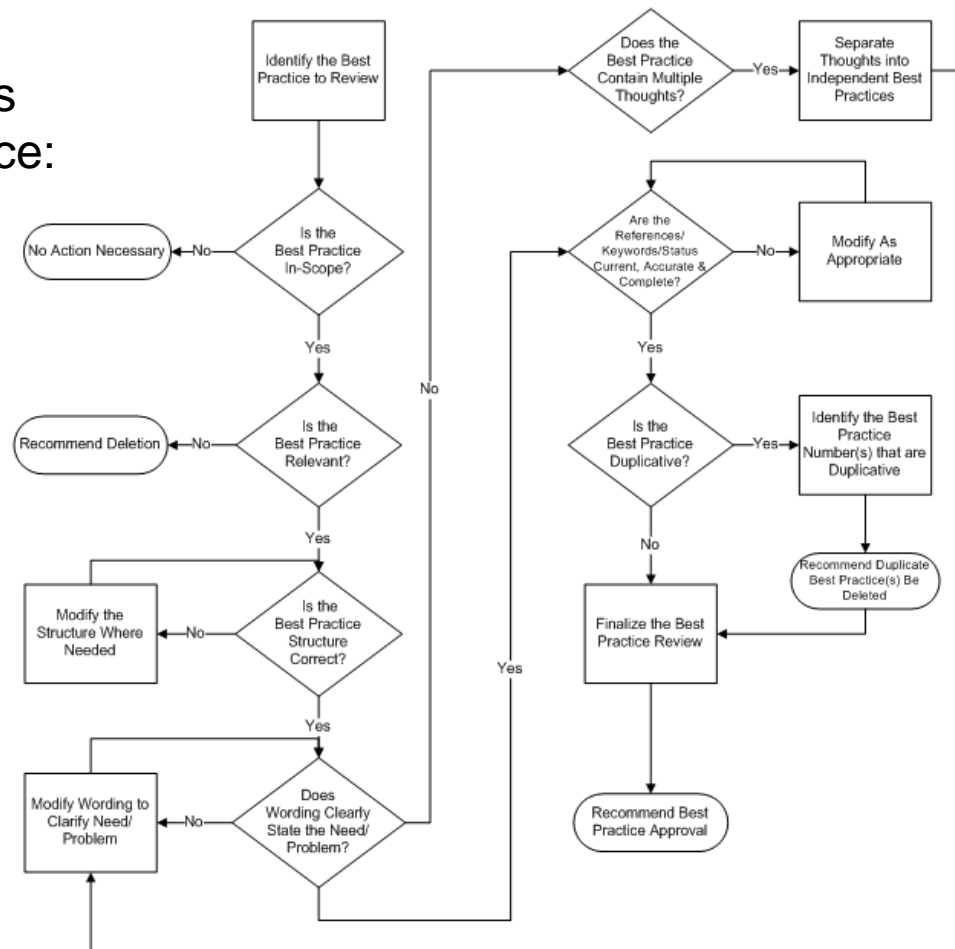
BEST PRACTICE REVIEW PROCESS

- Each checkpoint requires decisions be made regarding the Best Practice:

- Deeper Evaluations
- Gap Analysis
- New Best Practices
- Deletion Recommendations
- Up-to-Date No Changes



CSRIC IV WORKING GROUP 7: LEGACY BEST PRACTICE UPDATES Best Practice Review Process Flow



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Findings

- Assessed the existing set of 1,022 Critical, Highly Important, and Important Best Practices.
- Identified 476 Best Practices as in-scope.
- Excluded 18 Best Practices as out of scope.
- Developed four new proposed Best Practices.
- Identified 22 Best Practices for deletion that were no longer relevant, duplicates of other Best Practices, or made obsolete by the modification of another Best Practice.
- Identified 396 Best Practices that required modification or restructuring.
- Identified 40 Best Practices as satisfactory as written with no changes recommended.



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Findings

- **Best Practice Taglines**

Due to the lack of consistency of taglines and because existing search engines on the FCC and ATIS databases provide more than adequate search options, Working Group 7 concluded they add no value and should be discontinued.

- **Public Safety Industry Role**

This Industry Role was found to be applicable to many legacy Best Practices in light of the fact that many Public Safety organizations maintain their own communications networks.

- **Best Practice References**

Discovered a number of Best Practices where information contained in the body of the Best Practice was better aligned as reference support material. Best Practice was just as effective once specific standard documents, pay-for documents, or web link references were moved to the reference support section.



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Gap Analysis

- **Best Practice Creation Guide**

The development and editing of Best Practices for the purpose of having the greatest value for industry should be done in a tightly controlled and constant manner.

- **Best Practice Overlap**

There is ongoing risk that multiple Working Groups may unintentionally choose to edit the same Best Practices, or create similar Best Practices in parallel. Uncoordinated changes between Working Groups may come into conflict within various final reports.

- **For Purchase Documents**

Best Practices should not contain references or advertise documents that a user must pay for as a condition of implementing the Best Practice. Every effort was made to move occurrences of pay-for documents to the reference section and redefine as examples of available documents.

- **Non-Core Best Practices**

A number of Best Practices that did not clearly support the underlying theme of addressing reliability, security, or interoperability issues. These non-core Best Practices should be actively searched out, reviewed, and deleted if necessary.

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Recommendation Summary

1. Recommend that Best Practice edits outlined in Appendix 1 of the final report should be adopted and approved by CSRIC IV Council.
2. Recommend that the FCC establish a Best Practice clearing house function in all future CSRIC's.
3. Recommend that the use of Best Practice taglines be permanently eliminated and be removed from all remaining Best Practices.
4. Recommend that a future CSRIC be tasked with the creation of a documented process outlining a consistent and standard process for Best Practice creation.
5. Recommend that the FCC promote the process used to develop these Best Practices as part of a Best Practices education effort.

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Recommendation Summary

6. Recommend that a future CSRIC address the issue of pay-for documents referenced in Best Practice verbiage.
7. Recommend that a future CSRIC consider reviewing all Best Practices to identify those that do not meet the core definition of clearly supporting the reliability, security, or interoperability of the communication network.
8. Recommend that a future CSRIC consider chartering a Working Group to revisit all the Best Practices that deal with locating buried facilities and reconcile those with current 811 programs, including suggestions for collaboration with other industries.



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Conclusion

Several recommendations have been presented in this report that improve on Best Practices and the Best Practice process. Ongoing creation and periodic expert reviews should be held to the highest standards possible to ensure the greatest value to industry. Consistency in Best Practice creation and editing guidelines are paramount to their continued adoption. Best Practices that do not measure up to these strict quality guidelines should be reconsidered, modified if possible, or deleted if necessary.

Working Group 7:

- Reviewed over 470 Best Practices and provided edits to modernize and refresh based on changes in technology, practices, or observed reliability trends.
- Created four new Best Practices to address new classes of problems or to divide existing Best Practices into multiple individually focused Best Practices.
- Updated one new NRSC recommended Best Practice with supporting elements for approval.
- Recommended the deletion of 22 Best Practices found to be no longer relevant or needed.
- Developed recommendations and proposals intended to provide ongoing guidance to future CSRICs and external parties on maintaining a quality process and consistency in the Best Practice process.



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Next Steps

- **Best Practice Status review (e.g., Critical, Highly Important, Important)**
 - Recommend revisions to the best practice prioritizations based on CSRIC II WG6 recommended process.
 - Target Completion March 2015

