

# Previewing the CMMI for Services (CMMI-SVC)

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# What I will cover

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Explain why the CMMI-SVC is needed

Describe the development team, status, and release plan

Overview the current services content

Answer some common questions

Let you know how to participate, including piloting, training, licensing, examination, and authorization

Note: I include some information for your reference that I will not cover.

# What is the CMMI for Services?



CMMI-SVC extends the coverage of the CMMI product suite to cover the establishment, management, and delivery of services.

Like every CMMI model, CMMI-SVC

- is a process improvement approach that provides organizations with the essential elements of effective processes (PAs)

- can be used to guide improvement across a team, project, division, or an entire organization

- helps to set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes



# Why is the CMMI-SVC needed?



Service providers deserve a consistent benchmark as a basis for process improvement that is appropriate to the work they do and is based on a proven approach.

Demand for process improvement in services is likely to grow: services constitute more than 80% of the US and global economy.

Services constitute more than 54% of what the DoD acquires. In FY2006, DoD spent \$146 billion on services. GAO reports a 72% increase in DoD service contracts between 1996 and 2005.

Other service models exist, but don't cover what CMMI covers. Many organizations are cobbling together their own ITIL + CMMI solutions, reinventing the wheel over and over, and that wheel is not designed for services other than IT.

Customers are requesting that their service providers demonstrate a CMMI rating or capability profile, but attempts to use CMMI-DEV in a service setting can distort the integrity of appraisal results.

A variety of potential stakeholders approached the SEI asking for help with services.



# Volunteer organizations working with the SEI



## Team Members

- Eileen Forrester (SEI) – SEI lead and product owner
- Craig Hollenbach (Northrop Grumman) – team lead
- Brandon Buteau (Northrop Grumman) – architect
- Frank Niessink (DNV)
- Lynn Penn (Lockheed Martin)
- Roy Porter (Northrop Grumman)
- Pam Schoppert (SAIC)
- Drew Allison (SSCI)
- Eileen Clark (formerly SRA)
- Rich Raphael (MITRE)
- Sharon Hantla (Boeing)



## Prior members

- Jerry Simpson, SAIC
- Steve Stern, LMCO
- Jeff Zeidler, Boeing



# CMMI-SVC Advisory Group



Chris Carmody, UPMC

Sandra Cepeda, ARMDEC, SED/CSSA

Annie Combelles, DNV

Jeff Dutton, Jacobs Engineering

Brad Nelson, OSD

Larry Osiecki, Army

Tim Salerno, Lockheed Martin

Nidhi Srivastava, TCS

Beth Sumpter, NSA

David Swidorsky, Merrill Lynch

(Craig Hollenbach, Eileen Forrester, and Mike Phillips are non-voting members)



# Current status



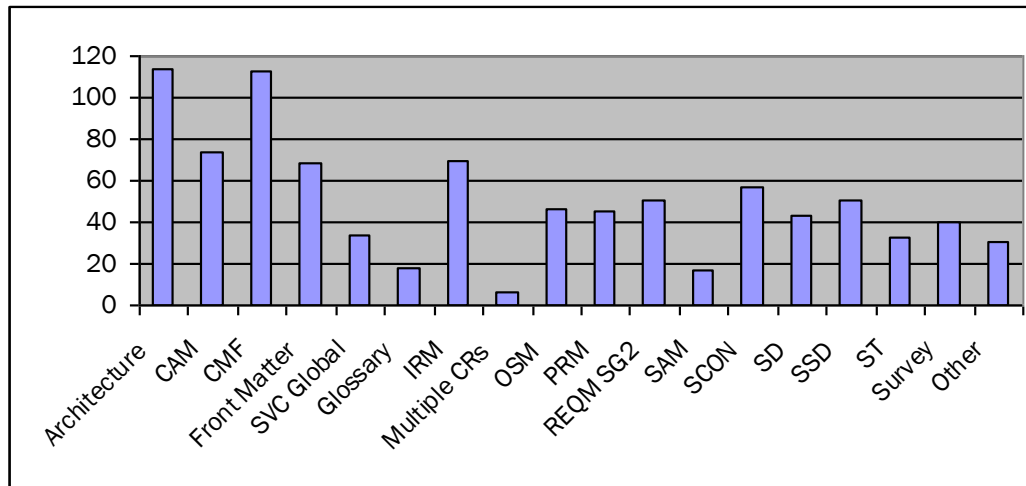
CMMI-SVC model development team is finished with revisions

Release of CMMI-SVC v1.2 is scheduled for March 2009

Licensing and authorization of CMMI-SVC available (more on this later)

Pilots under way, some since October 2006

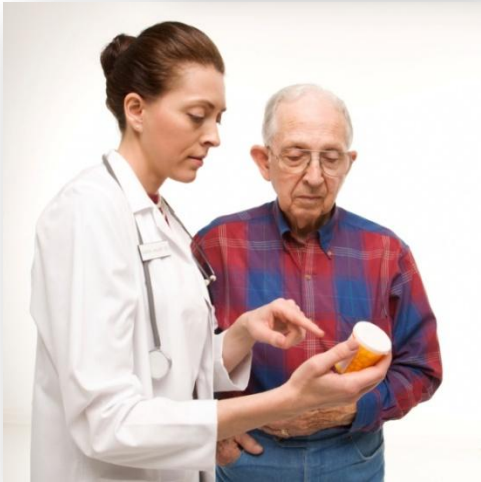
“Pre-release” training and exams available now



CMMI-SVC v0.5 change requests



# What types of services does CMMI-SVC cover?





# How do services differ from other products?



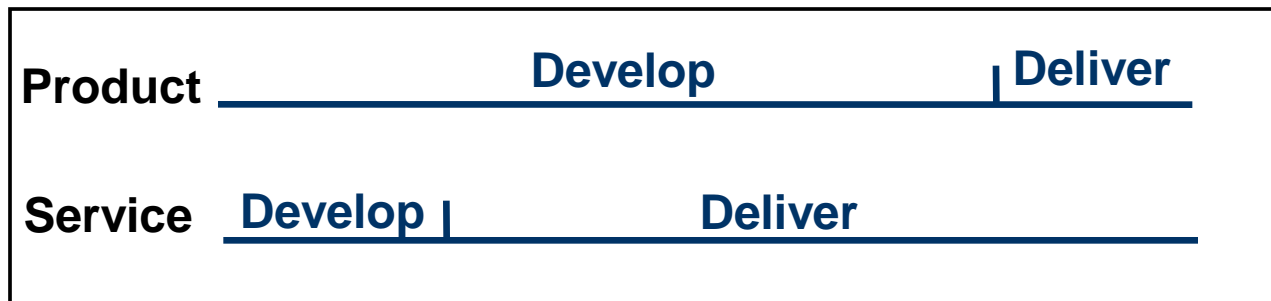
A service is an intangible, non-storable product (e.g., operations, maintenance, logistics, and IT).

Services imply on-going relationships governed by service agreements.

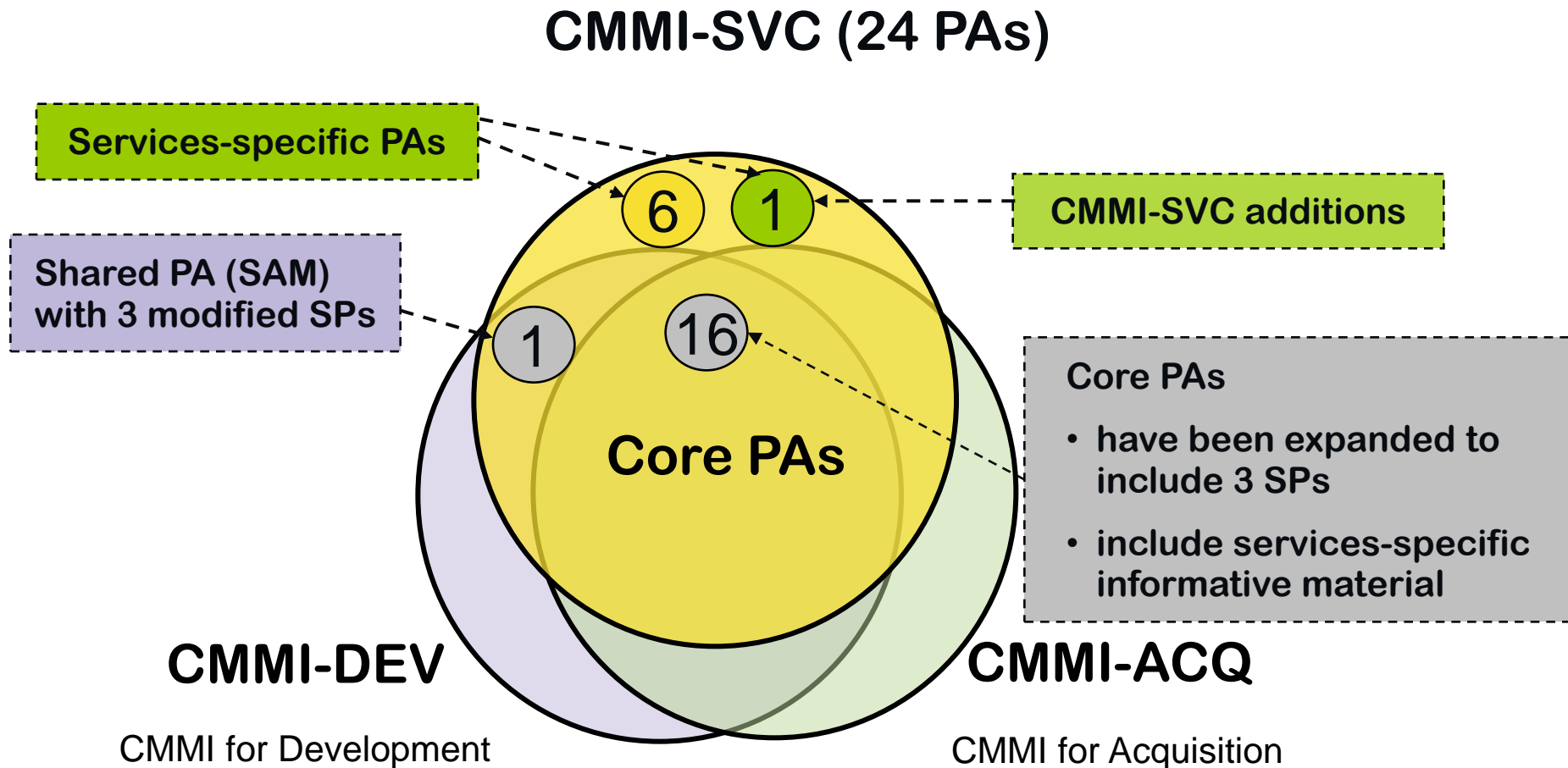
Services are delivered through the operation of a service system.

Services are simultaneously produced and consumed.

Services have a different business rhythm.



# CMMI-SVC content and other constellations



# CMMI-SVC content in words



CMMI-SVC consists of the 16 core PAs, one shared PA, and 7 service-specific PAs, 1 of which is an addition.

Core PAs in CMMI-SVC include the following:

- services-specific informative material
- expanded expected material (3 specific practices)
  - project strategy
  - integrated teams (previously covered in the IPPD addition of CMMI-DEV)
- the Requirements Management PA in the Project Management process area category



# CMMI-SVC process areas by category



## Process Management

- Organizational Innovation and Deployment (OID)
- Organizational Process Definition (OPD)
- Organizational Process Focus (OPF)
- Organizational Process Performance (OPP)
- Organizational Training (OT)

## Support

- Causal Analysis and Resolution (CAR)
- Configuration Management (CM)
- Decision Analysis and Resolution (DAR)
- Measurement and Analysis (MA)
- Process and Product Quality Assurance (PPQA)

## Project Management

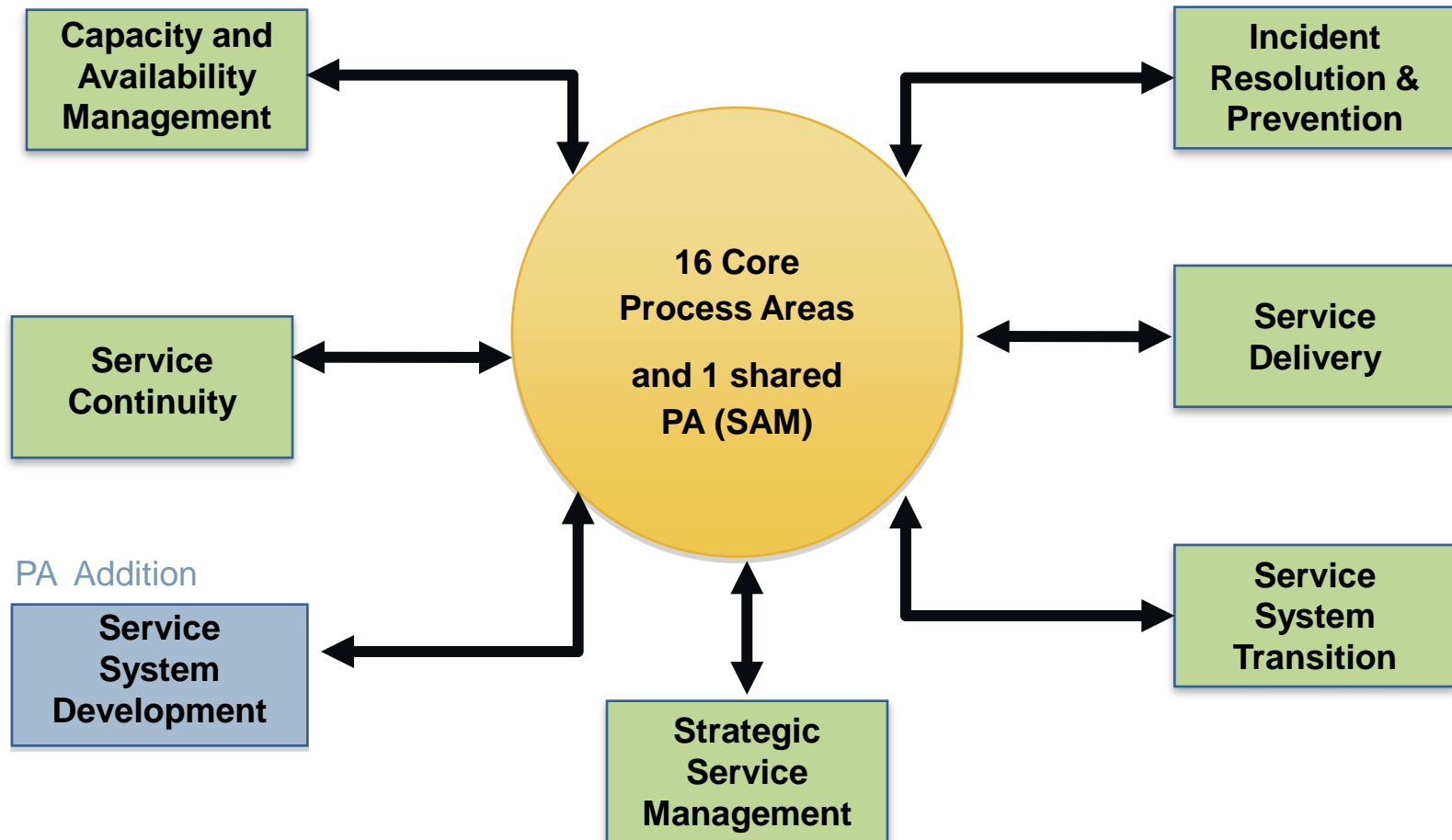
- Capacity and Availability Management (CAM)
- Integrated Project Management (IPM)
- Project Monitoring and Control (PMC)
- Project Planning (PP)
- Requirements Management (REQM)
- Risk Management (RSKM)
- Quantitative Project Management (QPM)
- Service Continuity (SCON)
- Supplier Agreement Management (SAM)

## Service Establishment and Delivery

- Incident Resolution and Prevention (IRP)
- Service Delivery (SD)
- (+) Service System Development (SSD)
- Service System Transition (ST)
- Strategic Service Management (STSM)



# CMMI-SVC content



# CMMI-SVC services-specific PAs in English



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## Strategic Service Management (STSM):

deciding what services you should be providing, making them standard, and letting people know about them

## Service System Development (SSD):

making sure you have everything you need to deliver the service, including people, processes, consumables, and equipment

## Service System Transition (SST):

getting new systems in place, changing existing systems, retiring obsolete systems, all while making sure nothing goes terribly wrong with service

## Service Delivery (SD):

setting up agreements, taking care of service requests, and operating the service system

## Capacity and Availability Management (CAM):

making sure you have the resources you need to deliver services and that they are available when needed—at an appropriate cost

## Incident Resolution and Prevention (IRP):

handling what goes wrong—and preventing it from going wrong in the first place if you can

## Service Continuity Management (SCON):

being ready to recover from a disaster and get back to delivering your service



# What are some common questions?

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Why do you use the word “project”?

What is a service request?

What is a service agreement? Don't you mean SLA?

What is a service level?

Shouldn't the standard service repository be the PAL?

Is this model about SOA or SaaS?

What's a service system?

What's a service system component?

Is this model a replacement for ITIL? Is it compatible with ITIL? Why didn't you just use the ITIL language for things? What about V3?

# How can you participate?

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Pilot and provide experience reports. Let us know if you'd like to be listed on our web site as an early adopter.

Review or implement the draft CMMI-SVC, especially for applicability in various service domains. Write to [customer-relations@sei.cmu.edu](mailto:customer-relations@sei.cmu.edu) to get the current draft.

Write additional scenarios for service types.

Contribute exercises and examples for appraisal training.

Suggest typical work products and other informative material for specific service types.

Provide mappings to other frameworks and models that you use.

Contact [partner-info@sei.cmu.edu](mailto:partner-info@sei.cmu.edu) if you aren't a partner and would like to learn about becoming one. We are accepting licensing requests now.



# Pilot appraisals and SCAMPI



We are encouraging pilots. CMMI partners have access to pre-release drafts and training to aid in piloting. We have an experience report template to assist you in giving us input.

You can do class B and C appraisals. But the results will not yet be recorded in our SAS system.

The Steering Group has decided we will not accept SCAMPI A results for six months after release of the model.

Three organizations have let us know they plan a SCAMPI A at the first opportunity.



# What feedback and input would we like?



Experience reports and feedback from pilots. We especially need feedback on

- multiple constellation and multiple model use
- typical work products
- using the CMF PAs in service contexts
- overcoming barriers from use of the word “project”
- examples and experiences from a range of service types
- elaborations for generic practices

Tangible whole product components we’re interested in include

- interpretive guides for particular service types
- exemplar PIIDs
- training exercises and examples
- scenarios for additional service types (see overview slides for examples)



# How do you get authorized with CMMI-SVC?



This is a brief summary of the steps. Write to [partner-info@sei.cmu.edu](mailto:partner-info@sei.cmu.edu) or see <http://www.sei.cmu.edu/partners/index.html> for full information.

Current authorized lead appraisers and instructors in good standing do the following:

1. Secure sponsorship from a partner and send the partner name, business point of contact, and your resume reflecting 5 or more years of service experience to [cmmi-svc-app@sei.cmu.edu](mailto:cmmi-svc-app@sei.cmu.edu)
2. Fill out the sponsorship form here: <http://www.sei.cmu.edu/partners/presentations.html>
3. Take the one-day course, *Services Supplement to Introduction to CMMI V1.2*
4. Pass the CMMI-SVC competency exam
5. Pass the resume review
6. Sign an amended agreement

Instructors will also have a readiness review by phone before teaching.

Candidate (new) individuals seeking authorization to teach or appraise must meet all other authorization requirements and show 10 years of service experience (2 of those 10 years must be managing service).

# CMMI-SVC training



The one-day training, *Services Supplement for CMMI V1.2*, is required for lead appraisers, SCAMPI B&C team leaders, instructors, and SCAMPI team members using CMMI-SVC.

Current information on offerings of the training is available here:

<http://www.sei.cmu.edu/products/courses/p69.html>

*Introduction to CMMI V1.2* is a prerequisite to attending the one-day *Services Supplement for CMMI V1.2*.

Until the CMMI-SVC model is released, only the SEI will offer the training. However, current partners wishing to pilot CMMI-SVC with clients can get a no-cost license amendment and a version of the training to offer to clients.

In addition to the training, tutorials, workshops, and presentations are regularly offered at conferences, online, and to SPINs and other groups.



# CMMI-SVC exam



Passing the competency exam is required for lead appraisers, SCAMPI B&C team leaders, and instructors using CMMI-SVC.

We do not require the exam for SCAMPI team members in pilots prior to model release. We may develop a different exam for them later.

The exam will be available at many of the pre-release training sessions, and at exam centers worldwide (beginning in mid December).

Visit this link to register for the exam:

<https://www.webassessor.com/wa.do?page=publicHome&branding=SEI>

The exam assesses a candidate's understanding of CMMI-SVC—both core and service-specific PAs. Thorough self study plus the course are needed to successfully pass the exam.



## Learning more

First offering of the pre-release one-day training was October 30 in Vancouver Washington after this workshop. This offering is for partners only.

We offer additional pre-release training in Mar de Plata (Nov 11), Denver (Nov 21), Arlington (Dec 8), London (Dec 9), and Frankfurt (Dec 11). We've been asked to consider offerings in France, Australia, South Africa, India, and Israel. Write to [customer-relations@sei.cmu.edu](mailto:customer-relations@sei.cmu.edu) for the registration form. Partners get first access and a discount, but others may also attend.

We will have a workshop in London on December 8 the day before the class, with possible other workshops coming in Europe and Australia.

The first public offering of the one-day training will be March 22 at the SEPG Conference in San Jose. Registration is available here for all public offerings upon release of the model:

[http://www.sei.cmu.edu/products/courses/register\\_p69\\_2009.html](http://www.sei.cmu.edu/products/courses/register_p69_2009.html)



# What are the remaining big issues?



Use of the word “project” in the service context.

The SEI is considering other options for how to describe work that is not development. This is relevant not only for services, but also for potential future CMMI constellations.

Handling joint appraisals and organizations that need more than one constellation to cover all their work.

Deciding if we need to do more or something different to qualify, train, and certify lead appraisers and SCAMPI team members.

Ensuring applicability and usability (and enough informative material) for different service types.

Improving usability for small settings.

In the next few slides, I’ll answer a few common clarifying questions about model content (time permitting).



# Common questions about CAM



## Capacity and Availability Management

- To plan and monitor the effective provision of resources to support service requirements

### Issues:

- Isn't this something only IT does?
- Isn't this PP and PMC?
- Shouldn't this be high maturity?
- Aren't you raising the bar on level 3?





# CMMI-SVC architecture principles (APs)



1. Minimize changes to CMMI architecture
2. Apply discipline-specific frameworks and models as sources of requirements and practices, but not as structural constraints
3. Model services-distinctive practices as distinct services process areas
4. Minimize cost of implementation and appraisal
5. Try to keep PA internal structure from getting too large (3-4 SGs, 3-4 SPs per SG) and balanced across PAs



# Could CAM be combined with PP & PMC?



- No – By AP #3, CAM practices are more specific expected guidance than is presented in PP and PMC. Adding purely informative material to PP and PMC would be inconsistent with existing level of detail.
- No – By AP #5, adding more specific practices to PP and PMC as CMMI-SVC additions would make those PAs larger and unwieldy, and would also be inconsistent with existing level of detail



## Why is CAM at Maturity Level 3?

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CAM practices are best employed as mature practices, standardized processes across projects at an organizational level

- Level 2 use is possible but not preferred

While dependent on some quantitative analysis and capability for prediction, CAM practices do not require statistical process control capability

- Level 4 or 5 use is not necessary, although CAM practices would be a likely beneficiary of QPM

After consulting with our Advisory Group, we elected to keep CAM at Level 3.

# When to use SSD

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Engineering PAs in DEV are recommended for improving product development process, large complex systems, and those very familiar with DEV.

Using SSD may be preferred by service provider organizations that are new to the CMMI Framework—especially those with simple services.

Even organizations that use the CMMI-DEV model for service system development may refer to the SSD process area for helpful guidance on applying development practices to service system parts like people, processes, and consumables.

Two places in the model to look for help for small, simple services if SSD is too much:

- the example box in SD for what to include in service delivery approach
- SP 1.3 in IPM, Establish the Project's Work Environment

# Distinguishing practices in STSM, PP, and SD



STSM calls for establishing standard services. If you will, these standard services are like templates for services you offer more than once. They may include things like life cycle options and suppliers you may use when offering that service.

The new SP in PP, Establish Project Strategy, is a practice that makes the standard service more particular for the agreement you are contemplating. You may tailor the life cycle, and perhaps you need an additional supplier for this instance of the service.

The SP in SD calling for developing your service delivery approach is used to make more tactical decisions. What's the schedule for various staff, for example.



# How can you stay informed?

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## Get more information about CMMI-SVC

- CMMI web page - <http://www.sei.cmu.edu/cmami/>
- CMMI for Services Public Workspace (<http://bscw.sei.cmu.edu/pub/bscw.cgi/0/424939>) has
  - Q&As and notices
  - Information on joining CMMI-SVC information email list
  - Presentations on CMMI-SVC

Write to [cmami-comments@sei.cmu.edu](mailto:cmami-comments@sei.cmu.edu) with comments and questions

When in doubt, contact SEI CR: [customer-relations@sei.cmu.edu](mailto:customer-relations@sei.cmu.edu)

Use this address to request the current draft or join the email alias



# Contact information

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Eileen Forrester

[ecf@sei.cmu.edu](mailto:ecf@sei.cmu.edu)

# Applying CMMI-SVC to Health Care





## Capacity and Availability Management:

In pharmaceutical and respiratory services, this could mean planning and monitoring to ensure that sufficient resources, such as pharmacists, therapists, drugs, and oxygen, are available on a regular basis to enable delivery of drugs and respiratory care at an appropriate cost.

## Service Continuity:

Establishing and maintaining contingency plans for continuity of agreed services during and following any significant disruption of normal operations. In these services, staff may make a plan and rehearse how to restore service after a natural disaster, pandemic, or terrorist attack.

## Service System Development:

For pharmaceutical and respiratory services, the service system includes facilities, such as the pharmacy supply rooms; shelves and equipment, such as that for measurement, delivery of drugs, and breathing equipment (infrastructure); doctors, nurses, pharmacists, therapists, and technical specialists (people); (consumables) such as drugs and oxygen; and diagnosing, prescribing, drug preparation, scheduling, planning, budgeting, and treating (processes).

## Service System Transition:

Suppose the state in which a hospital group operates passed a law that nurses are no longer able to administer certain drugs, except in the presence of a pharmacist. These practices would be invoked to make the changes to people and processes that would be required to comply with the law while continuing to provide service.

## Service Delivery:

For pharmaceutical and respiratory services, this would mean preparing a schedule of pharmacists and therapists, preparing and delivering drugs and respiratory care, monitoring supplies of drugs and equipment, acquiring consumables, managing requests, tracking customer satisfaction, and maintaining the infrastructure of the pharmacy and treatment facility. For these services, a request might be for a prescription for a new pain medication ordered for a patient in ICU, a consultation from a PharmD to doctors considering medications for a patient with an already complex drug regimen, or a respiratory therapist to come to the emergency department to treat a child suffering a severe asthma attack.

## Incident Resolution and Prevention:

An incident in this scenario might be delivery of a medication in the wrong dosage or media or failure to deliver the respiratory equipment in the time needed for the emergency patient suffering a severe asthma attack.



## Strategic Service Management:

In these cases, the hospital organization would establish a range of standard pharmaceutical and respiratory services to meet the needs of its customers, and then periodically analyze strategic data from markets and customers of pharmaceutical and respiratory services to revise these services to meet those needs. Standard services would include service-level agreements, which might specify, for example, response times for emergent and non-emergent treatment and delivery of prescriptions by the service providers.

By analyzing the set of services and user data, the organization might realize that they have a demand not only for corrective respiratory services, but also for services that could optimize the performance of athletes and musicians. The provider could then add standard respiratory performance services to their service line.





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